OCEANOGRAPHIC OBSERVATIONS, 1960, EAST COAST OF THE UNITED STATES

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OCEANOGRAPHIC OBSERVATIONS, 1960
EAST COAST OF THE UNITED STATES

by

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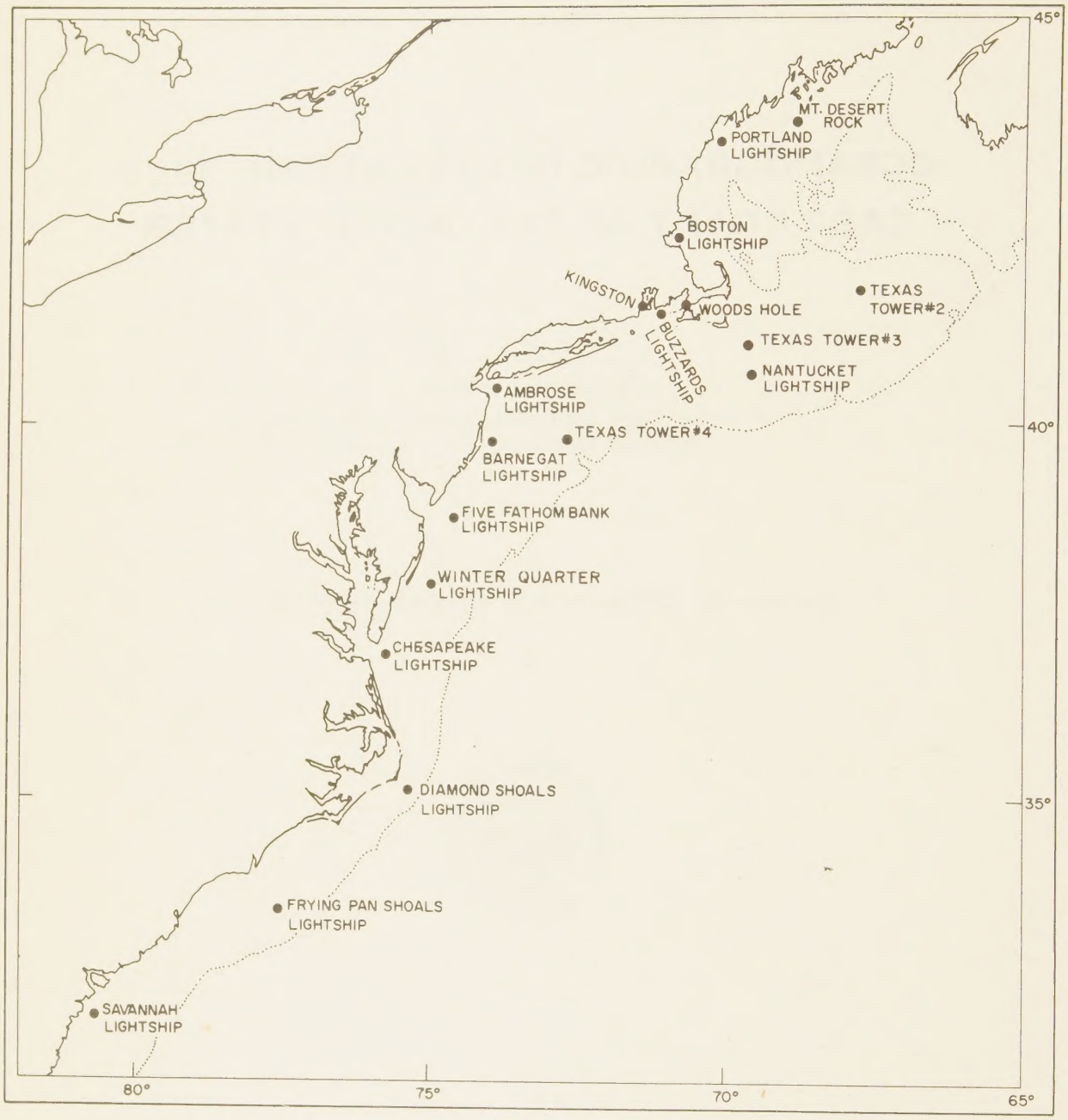

Frontispiece. Locations along the Atlantic Coast reported herein.

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ABSTRACT

Daily water temperature and salinity observations for 1960 from eighteen locations along the Atlantic seaboard are tabulated, plotted and discussed for the fifth consecutive year.

INTRODUCTION

Through the cooperation of the U.S. Coast Guard, the Woods Hole Oceanographic Institution established late in 1955 a series of oceanographic observation posts at a number of lightship stations along the east coast of the United States. Additional data have been obtained from independent observers, from the Narragansett Marine Laboratory and, courtesy of the U.S. Air Force, from Texas Towers 2, 3, and 4.

The lightship data have been forwarded on a monthly basis to Woods Hole, where they have been processed. The bathythermograms have been read at several levels and tabulated; salinities were determined by salinometer. The records of air temperature, weather, wind, and clouds were used in studying the other data, but are not presented here as they are the same as those published in the daily weather maps of the U.S. Weather Bureau.

In addition to tabulating these data, mean temperatures for each level for three equal time periods per month have been determined and plotted, as time-depth profiles for the year at each station where bathythermographs were used. The one-third monthly mean surface temperatures have been plotted in comparison with the monthly mean surface temperature for the period of record of each station.

The one-third monthly means of surface salinity have been appended to the temperature profiles, together with the weekly bottom salinity values.

The monthly mean surface water temperatures for the year 1960 for all stations are listed in table 1 for comparison with previous records.

We are particularly indebted to the U.S. Coast Guard personnel aboard participating lightships, and to the personnel of the 12th Weather Squadron, USAF, at the three Texas Towers reporting and at Otis Air Force Base.

We hope to continue the collection and publication of these data on an annual basis, and should be glad to include data of a comparable nature from other locations.

This work was supported by the Bureau of Commercial Fisheries, U.S. Fish and Wildlife Service, under Contract No. 14-17-0007-9 with the Woods Hole Oceanographic Institution.

COMMENTARY

Summary for 1956-60

Since the present report marks the completion of 5 years of oceanographic observations under this program, a brief description of results to date is perhaps appropriate.

Surface Temperature.--Day to day variations in temperature, sometimes of considerable magnitude, are found at nearly all stations; these changes are often obscured in the 10-day mean values used for the temperature profiles in the reports. They are more pronounced at near-shore stations, where they appear to be the result of tidal action on relatively shallow water which is constantly being mixed and subjected to the influence of unmodified continental air. Further offshore, with the exception of Diamond Shoals, temperature is more stable from day to day.

With only 5 years of record it is not possible to distinguish between normal and unusual departures from mean conditions. Temperature regimes differ at various stations according to the hydrographic geography.

In the annual cycle, warming and chilling of surface waters are fairly uniform trends with few reversals. The more static conditions of summer and winter are subject to abrupt, short-term changes; these are more pronounced during the summer when strong winds often partially mix a stratified water column. The short-term wintertime changes are less marked; they result no doubt from changes in air temperature and from advection.

Table 1.--Surface water temperatures °F - monthly and annual means, 1960

Location	Monthly												Annual means
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Mount Desert Rock Lightship.....	35.3	-	34.3	35.6	40.6	45.4	52.0	52.7	53.0	50.3	45.6	38.4	-
Portland Lightship...	39.7	-	37.0	40.2	48.7	55.7	58.5	60.3	-	53.8	48.2	43.5	-
Boston Lightship.....	39.9	38.5	36.8	41.3	51.4	58.4	58.4	63.5	61.7	54.0	49.2	43.8	49.7
Georges Shoals.....	41.9	40.2	39.2	40.5	44.4	49.2	56.6	60.2	61.0	59.0	53.8	46.6	49.4
Nantucket Shoals.....	39.6	39.5	37.3	-	41.5	44.1	50.3	53.5	54.4	52.3	51.6	46.4	-
Nantucket Light-ship.....	-	-	-	40.9	-	49.7	-	63.7	-	-	-	-	-
Woods Hole.....	34.6	34.7	33.8	41.8	53.4	63.3	69.9	70.3	67.0	59.8	51.0	39.2	51.6
Buzzards Lightship...	40.3	37.7	36.0	40.5	51.2	57.8	63.3	65.5	63.6	60.2	53.7	-	-
Kingston, Rhode Island.....	38.7	38.2	37.0	43.6	53.8	61.7	66.7	68.4	64.9	58.6	51.4	41.3	52.0
Ambrose Lightship....	42.7	39.5	37.8	45.7	-	-	67.7	70.7	68.1	-	53.9	46.7	-
Texas Tower #4.....	48.4	45.1	40.4	42.7	52.4	62.2	71.1	68.8	65.8	61.4	-	-	-
Barnegat Light-ship.....	43.7	41.6	39.3	46.4	58.0	66.4	72.1	73.8	70.3	-	54.9	44.3	-
Five Fathom Bank Lightship.....	43.5	-	-	45.5	56.0	66.7	73.1	74.0	71.4	65.1	57.0	47.8	-
Winter Quarter Lightship.....	45.5	43.5	-	47.4	57.9	68.1	-	74.6	-	-	57.7	49.5	-
Chesapeake Light-ship.....	45.2	42.0	38.2	48.9	61.8	72.0	76.5	76.5	74.6	69.8	-	48.5	-
Diamond Shoals Lightship.....	63.1	-	-	63.7	67.9	76.7	81.3	81.1	79.0	75.3	67.5	69.5	-
Frying Pan Shoals Lightship.....	64.0	59.3	-	62.2	-	76.7	80.1	81.8	80.1	77.0	70.2	66.9	-
Savannah Lightship...	53.1	53.3	51.1	61.7	70.8	78.2	83.3	83.8	81.5	76.5	67.0	57.1	68.1

The Thermocline.--Completely isothermal water is seldom found at any of the lightship stations employing the bathythermograph. From November through February, bottom water tends to be slightly warmer than surface water since mixing does not keep pace with chilling. When vernal warning begins at the surface, mixing continues to produce a similar warming at depth, but again with a lag, so that a negative gradient is established. The thermocline thus produced is strongest during July and August at a depth between 30 and 60 feet. At stations from Ambrose through Chesapeake the temperature gradient is from time to time intensified by advection, possibly through upwelling, of colder water near the bottom. Destruction of the thermocline is directly associated with autumn storms, often connected with the passage of hurricanes. If such storms occur early in the autumn, the thermocline may reappear briefly before the final overturn.

Bottom Water Temperature.--Warming and chilling at the bottom are not the steady progressions seen at the surface. There are sharp changes in rate and frequent reversals in trend. When thermal stratification is present, abrupt warming at the bottom is apparently the result of wind mixing, as at the time of the autumn overturn when bottom values reach their maximum, sometimes rising as much as 18°F. in 48 hours. Abrupt cooling appears to be associated with the advection of colder offshore water.

Salinity.--From Ambrose Lightship northward, the surface salinity minimum near shore occurs in late April or early May, reflecting the peak runoff augmented by snow melt. At Georges Shoals, farther offshore, the minimum probably appears in late summer. From Barnegat Lightship southward the salinity minima may occur at any time and more immediately reflect local precipitation, since there is little storage by freezing on the adjacent watersheds. At most stations, Savannah excepted, the January and February surface salinity readings show little year-to-year difference.

The two principal factors influencing the salinity regime at the different lightship stations are fresh water runoff from the land and incursions of highly saline oceanic water. The interplay of these forces is most apparent at Diamond Shoals, where Gulf Stream water of 36.0°/oo often is replaced in a matter of hours by water of 30.0 °/oo.

The effect of runoff is most noticeable at Portland, Ambrose, Chesapeake, and Savannah stations, which are near major sources of outflow. The salinity fluctuations at these stations run parallel to the gaged river flow with only a slight temporal lag. At other stations further offshore the fluctuations are less extreme and occur later than at the inshore stations.

Monthly mean salinity values between Ambrose and Winter Quarter stations increase toward the south. Bigelow (1935) drew diagrams of the locations of surface isohalines for successive months, based on data from sections extending offshore across the shelf in this region. While his values increase offshore along a given section, his isohalines curve toward the coast in the Chincoteague region, also showing a southward increase in salinity.

Ketchum and Keen (1955) discussed this phenomenon in a study of the accumulation of river water over the shelf in the same region, concluding that considerable local mixing across the shelf must take place. The lightship data tend to confirm this conclusion.

The annual salinity cycle at the lightship stations reflects the annual precipitation—runoff regime over the east coast. If dynamic gradients from the shore out over the shelf contribute strongly to the circulation patterns, there will be large seasonal and year-to-year variations in coastal currents. Southwesterly movement along shore should be greatest during April and May at the time of peak runoff and before the summer southwesterly winds become established. During the winter, the dynamic gradient would be weakest.

Meteorological Effects.--The influence of weather on the hydrography of the area of study has been demonstrated in several instances. Bumpus (1960) showed that runoff is a critical factor in inducing the cyclonic movement in the Gulf of Maine, beginning in late winter and early spring. The earlier postulation of Bumpus and Pierce (1955) concerning the penetration of Virginian coastal water southward past Cape Hatteras has been substantiated (Bumpus, 1957; Chase, 1959; Day, 1959). Wells and Gray (1960) found a close correlation between the abundance of *Mytilus edulis* in the Beaufort, N.C. region in June and the frequency of northeast storms at Cape Hatteras during the reproductive period of the preceding autumn. Chase has also shown the effect of northeasterly wind regimes on the temperature structure during the summer at stations between New York and Chesapeake.

Only in the broadest terms is it possible to see a direct relationship between air temperature anomalies and trends in water temperature, except at stations close to shore, e.g., Woods Hole. Consideration of wind systems, however, as in the study by Chase

(1959) has been more rewarding and leads to the conclusion that changes in water temperature at a given station are often the result of wind-induced advection rather than in situ modification of water by the atmosphere. Day (1960) shows an instance of this happening at Browns Ledge during the summer of 1959.

The 1960 Data

Surface temperature (fig. 1).--The surface water temperature regime from Cape Cod to Cape Hatteras was marked by a warm January and February followed by a cold March which produced the minima for all stations. This cold period was similar to that in 1958 though it was less intense and of shorter duration; the temperature barrier at Cape Hatteras was weakened but not breached. Recovery was rapid and was followed by above-the-mean temperatures during the late spring and summer. November was warm, but December temperatures fell well below the mean.

Bottom temperature (fig. 1).--During the nearly isothermal months of late winter bottom water temperatures reflected surface conditions; values were low but not as low as in 1958. The summertime intrusion of cold bottom water was again apparent from Barnegat station southward. At most stations maximum bottom readings occurred after the autumn turnover in late September; values were high, probably because of the warm surface conditions earlier in the month. It is noteworthy that except at Barnegat Lightship hurricane Donna, which moved up the coast on September 11 and 12, failed to mix the water column completely and that the turnover was not accomplished until late in the month.

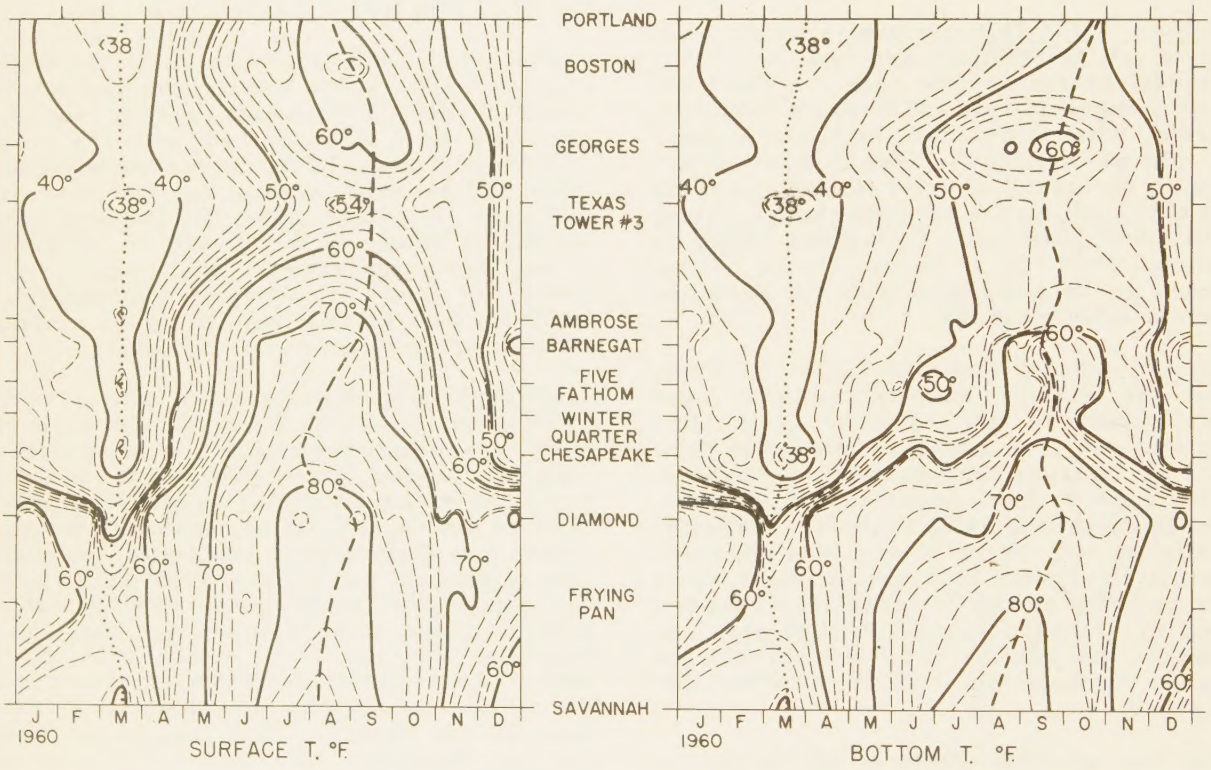

Figure 1.--The cycle of temperature at the surface (left) and bottom (right) along the series of observation posts for 1960. Heavy dotted and dashed lines indicate minimum and maximum temperatures respectively.

Mt. Desert Rock Light Station (fig. 2, table 2)--Surface water temperatures from this station are presented for the first time in this series of reports. The small annual range in temperature, less than 18° F., is probably characteristic of the offshore waters in the Gulf of Maine. In the winter and spring months of 1960 values were below the mean; summer readings were near normal. The warm November followed by abrupt chilling in December was characteristic of conditions along the entire east coast at that time.

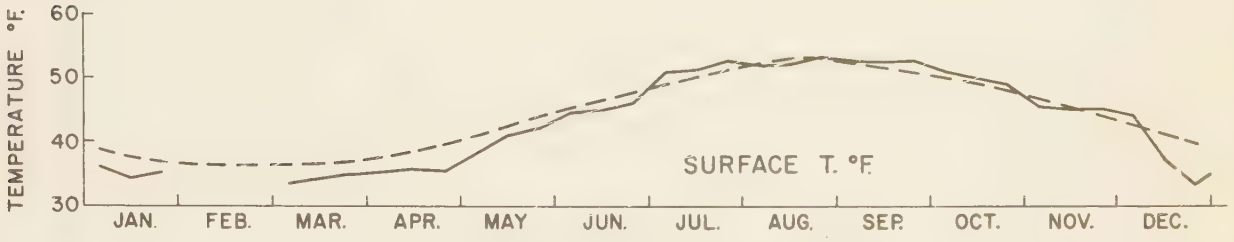

Figure 2.--Mt. Desert Rock Light Station. (Dashed line mean for period 1925-40.)

Table 2.--Mt. Desert Rock Light Station: surface water temperature (° F.) 1960

[43°58.1' N., 68°07.8' W.]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.0	-	33.5	35.5	37.0	44.0	49.0	52.0	54.0	51.0	48.0	45.0
2	40.0	-	32.5	34.0	36.0	43.5	49.5	53.0	52.5	52.0	46.0	44.0
3	40.0	-	33.0	35.5	36.0	44.5	50.0	52.5	52.5	51.0	47.0	44.0
4	37.0	-	33.5	36.5	36.5	44.5	50.5	52.0	52.0	52.0	45.0	45.0
5	36.0	-	35.0	35.0	38.5	44.0	52.0	52.0	53.5	51.5	45.0	46.0
6	36.0	-	34.5	36.0	39.5	44.5	52.0	52.0	54.5	51.5	45.0	46.0
7	35.0	-	34.0	34.0	40.0	45.0	52.0	52.0	53.5	51.5	45.0	44.5
8	36.0	-	34.0	36.5	40.5	46.0	52.0	52.0	53.0	51.5	46.0	44.0
9	33.5	-	33.0	35.5	40.5	46.0	52.0	52.0	52.5	51.0	46.0	44.0
10	32.5	-	33.5	36.0	41.5	46.0	52.5	52.5	52.0	51.0	46.0	42.5
11	33.0	-	34.0	35.5	41.0	46.0	52.0	52.0	51.5	51.0	45.0	40.5
12	34.0	-	33.0	35.0	41.0	45.5	50.5	52.0	51.0	51.0	46.0	39.5
13	34.0	-	33.5	35.0	40.5	46.0	50.0	52.0	51.0	51.0	46.0	39.0
14	33.0	-	34.5	36.5	40.0	46.0	51.5	52.0	53.0	51.0	46.0	38.0
15	35.5	-	34.5	36.5	41.5	44.5	52.5	52.5	52.5	50.5	45.0	38.0
16	35.5	-	34.5	36.0	41.5	44.5	52.0	51.5	53.5	50.0	45.0	37.0
17	34.0	-	34.0	36.5	40.5	44.5	52.0	52.0	53.5	50.0	45.5	36.0
18	34.5	-	34.5	36.5	41.5	44.0	52.0	52.5	54.5	50.0	46.0	36.0
19	35.0	-	35.0	35.5	41.5	46.0	52.0	53.5	54.5	50.0	45.0	36.0
20	35.5	-	34.0	35.5	40.5	45.0	52.0	54.0	53.5	50.0	45.0	36.0
21	36.5	-	35.0	35.5	41.0	45.0	52.5	53.5	52.5	50.0	46.0	35.0
22	36.0	-	34.0	34.5	40.5	44.5	54.0	53.5	53.5	50.0	46.0	34.0
23	35.5	-	32.5	34.5	41.5	46.0	54.0	54.0	53.5	50.0	45.5	34.5
24	34.0	-	35.0	36.5	40.5	46.0	53.5	53.0	55.0	50.0	44.5	34.0
25	36.0	-	34.5	35.5	41.5	46.0	53.0	52.0	52.5	50.0	44.5	34.0
26	35.5	-	34.0	35.5	42.0	46.0	53.0	53.5	52.5	50.0	45.0	34.0
27	35.0	-	34.5	35.0	43.0	47.0	53.0	54.0	54.5	50.0	46.0	34.0
28	36.0	-	35.5	36.0	43.5	47.0	53.5	52.5	52.5	48.0	46.0	32.0
29	36.0	-	36.0	36.0	43.5	48.0	52.0	54.0	51.0	48.0	46.0	32.0
30	34.0	-	36.5	36.5	44.0	48.0	52.0	54.0	52.5	48.0	46.0	33.0
31	34.0	-	37.0		43.0		52.0	54.0		46.0		32.5
Mean	35.3	-	34.3	35.6	40.6	45.4	52.0	52.7	53.0	50.3	45.6	38.4

Portland Lightship (fig. 3, table 3)--A warm June and an abrupt depression in surface temperatures in early July represent the only noteworthy departures from the mean at this station. Minimum bottom values appeared in mid-March, the maximum in late October.

The surface salinity during February, March, late April, and mid-May were the lowest on record. River runoff in the New England area had been above median during January, February, and April. (U.S. Geological Survey.)

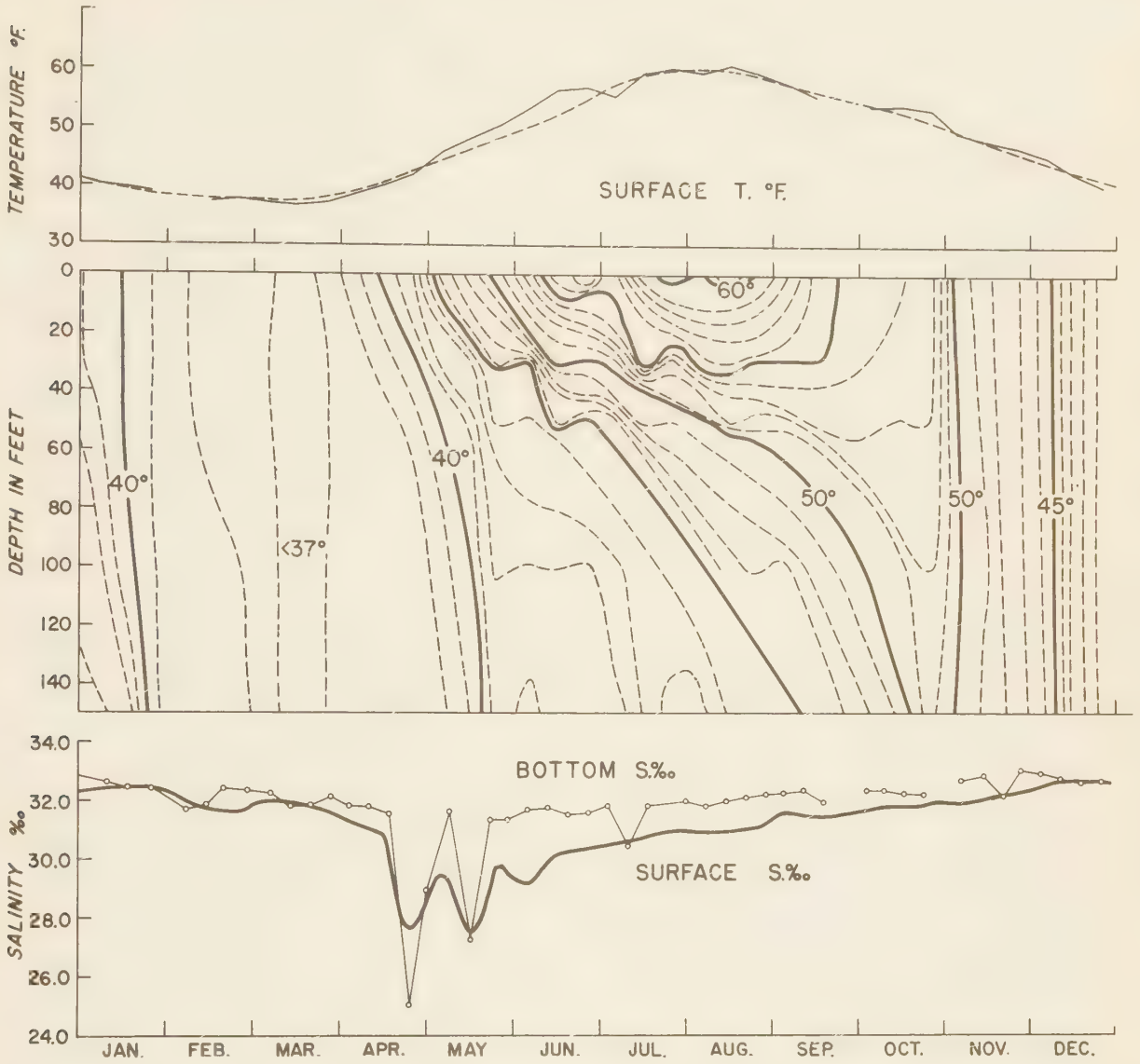

Figure 3.--Portland Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 3.--Portland lightship: temperature (° F.) and salinity (°/oo), 1960

[43°31.6' N., 70°05.5' W.; water depth: 160 feet]

Month and day	Temperature at depth of--					Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	0 ft.	150 ft.
January							
1	39.3	39.7	40.1	41.5	42.2	32.35	-
2	38.2	40.3	41.7	43.0	43.3	.34	-
3	42.3	42.3	42.5	43.2	43.6	.34	-
4	-	-	-	-	-	32.33	-
5	-	-	-	-	-	-	-
6	39.6	40.0	41.9	43.0	43.3	32.34	-
7	42.4	42.4	42.4	43.4	44.6	32.34	-
8	-	-	-	-	-	-	-
9	-	-	-	-	-	32.34	-
10	40.7	40.6	40.8	41.9	43.0	.40	32.61
11	39.8	40.9	40.9	41.3	43.2	.46	-
12	40.0	39.9	39.9	40.6	43.4	.33	-
13	39.0	39.3	39.7	40.3	42.9	.10	-
14	39.0	38.7	39.3	40.8	42.8	.06	-
15	39.2	39.2	39.2	40.1	43.0	.22	-
16	40.6	40.1	40.1	41.5	-	.68	-
17	40.0	40.0	40.0	41.0	-	.45	32.45
18	40.1	40.0	40.0	41.0	-	.53	-
19	39.9	39.9	39.9	40.0	41.7	.51	-
20	41.0	40.9	40.9	41.3	43.4	.60	-
21	-	-	-	-	-	.60	-
22	39.3	39.0	38.9	39.0	40.3	.49	-
23	39.5	39.4	39.0	39.0	39.2	.28	-
24	39.1	39.0	39.0	39.3	39.8	.28	32.41
25	39.0	39.1	39.0	39.5	39.9	.28	-
26	38.5	38.4	38.4	38.6	-	.56	-
27	37.9	38.2	38.6	39.7	40.6	.16	-
28	39.3	39.2	39.2	39.1	39.0	.56	-
29	-	-	-	-	-	.49	-
30	39.8	39.4	39.1	39.0	38.9	32.54	-
31	39.0	39.0	38.8	38.3	38.2	-	-
Mean	39.7	39.8	40.0	40.6	41.7	32.39	-
March							
1	37.5	37.6	37.7	38.4	-	32.16	-
2	37.4	37.4	37.4	38.4	-	.17	-
3	36.6	36.6	36.8	36.7	37.0	.15	-
4	36.9	36.9	36.9	36.9	36.9	.22	-
5	37.0	37.0	37.2	37.2	37.4	.39	-
6	37.1	37.0	38.2	38.2	38.2	32.06	32.23
7	37.1	37.0	37.1	37.2	37.6	31.27	-
8	36.9	36.8	37.2	37.3	37.4	.27	-
9	-	-	-	-	-	.91	-
10	-	-	-	-	-	.86	-
11	-	-	-	-	-	.86	-
12	36.6	35.9	36.0	36.2	37.2	.89	-
13	35.9	35.8	35.9	36.0	36.6	.77	31.80
14	-	-	-	-	-	.97	-
15	35.2	35.0	35.6	35.6	35.7	31.98	-
16	36.9	35.8	35.8	35.8	35.7	32.15	-
17	36.9	36.9	36.9	36.9	36.9	.12	-
18	36.6	36.0	36.0	36.1	36.1	32.02	-
19	36.8	36.0	36.2	36.2	36.6	31.68	-
20	39.1	36.2	36.7	36.9	36.9	.08	31.87
21	38.5	36.8	36.6	37.2	37.2	.36	-
22	36.9	36.8	36.8	36.9	36.9	.39	-
23	36.8	36.6	36.5	37.0	37.1	.58	-
24	36.9	36.7	36.9	37.0	-	.66	-
25	36.9	36.7	36.8	37.0	-	31.70	-
26	36.7	36.2	36.2	36.8	36.9	32.02	-
27	36.4	36.4	36.4	36.8	37.0	31.87	32.12
28	38.0	37.2	36.9	37.1	-	.84	-
29	37.0	36.5	36.5	36.8	37.0	.69	-
30	37.3	36.9	36.9	37.1	37.1	.85	-
31	37.8	37.0	37.0	37.1	37.1	31.67	-
Mean	37.0	36.6	36.7	36.9	36.9	31.83	32.00

Month and day	Temperature at depth of--					Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	0 ft.	150 ft.
February							
1	37.3	37.4	38.2	38.8	38.0	32.56	-
2	-	-	-	-	-	.31	-
3	-	-	-	-	-	.38	-
4	-	-	-	-	-	32.42	-
5	-	-	-	-	-	31.90	-
6	-	-	-	-	-	.88	-
7	-	-	-	-	-	.89	31.70
8	-	-	-	-	-	.92	-
9	37.1	37.0	37.2	38.1	38.3	.89	-
10	37.4	-	37.8	38.4	-	31.83	-
11	37.8	37.5	37.6	37.9	38.0	32.02	-
12	37.6	37.6	37.7	37.9	37.9	31.82	-
13	37.3	37.1	37.5	38.2	38.5	.62	-
14	36.6	36.9	37.3	38.4	38.8	.76	31.88
15	36.9	36.9	37.1	38.2	38.8	.77	-
16	37.2	37.9	38.1	38.6	38.8	.71	-
17	37.3	37.4	38.2	38.7	38.7	.60	-
18	38.3	37.6	37.8	38.9	38.8	31.60	-
19	-	-	-	-	-	-	-
20	37.4	37.1	37.2	37.9	38.0	31.51	32.42
21	36.8	36.9	37.6	38.0	-	.44	-
22	38.3	37.7	37.9	38.5	38.8	.46	-
23	37.8	37.2	37.3	38.1	-	.75	-
24	-	-	-	-	-	31.65	-
25	37.9	37.1	37.0	37.9	38.1	30.89	-
26	37.8	37.9	37.9	38.6	38.4	31.63	-
27	38.2	37.9	38.1	38.5	38.3	31.65	-
28	38.1	38.1	38.1	38.3	38.7	32.07	32.35
29	38.4	38.0	38.1	38.4	38.7	32.10	-
Mean	-	-	-	-	-	31.82	32.09
April							
1	38.1	37.5	37.3	37.2	37.2	31.64	-
2	38.2	38.0	37.7	37.1	37.2	.83	-
3	38.3	38.0	37.9	37.3	37.2	31.77	31.82
4	40.1	38.0	37.5	37.1	37.1	30.88	-
5	38.1	38.0	37.2	37.1	37.1	31.48	-
6	38.1	37.9	37.1	37.1	37.1	31.18	-
7	38.4	37.8	37.2	37.2	37.5	32.02	-
8	38.9	37.9	37.5	37.4	37.4	30.55	-
9	39.0	37.8	37.5	37.5	37.4	.48	-
10	39.1	37.8	37.3	37.3	37.4	.29	31.80
11	39.9	39.2	38.0	37.6	37.7	.37	-
12	38.9	38.2	37.4	37.6	37.8	30.69	-
13	-	-	-	-	-	31.57	-
14	39.8	38.9	37.8	37.7	37.8	.43	-
15	42.0	39.8	39.7	39.3	39.7	31.38	-
16	40.0	37.2	36.9	36.6	36.7	-	-
17	41.2	38.4	37.5	36.9	-	31.42	31.56
18	40.7	38.2	37.9	36.9	36.9	30.59	-
19	40.0	38.6	37.0	36.7	36.5	.24	-
20	39.0	38.4	37.0	36.9	36.9	.25	-
21	40.4	39.2	38.4	36.9	36.9	30.07	-
22	41.1	40.0	37.9	36.9	37.0	29.01	-
23	41.8	40.3	37.7	36.9	36.9	28.18	-
24	40.8	40.4	37.8	36.8	36.7	24.99	25.02
25	41.8	40.3	38.4	36.9	37.0	27.04	-
26	43.4	38.9	38.6	37.1	37.0	.37	-
27	42.2	39.6	38.9	37.1	37.1	27.35	-
28	-	-	-	-	-	25.81	-
29	43.7	40.1	38.2	37.8	37.3	28.40	-
30	43.0	40.0	38.7	37.8	37.2	28.40	-
Mean	40.2	38.7	37.8	37.2	37.2	29.89	30.05

Table 3.--Portland Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[43°31.6' N., 70°05.5 W.; water depth: 150 feet]

Month and day	Temperature at depth of--					Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	0 ft.	150 ft.
May							
1	43.2	39.3	38.8	38.0	37.2	28.89	28.92
2	-	-	-	-		30.43	-
3	45.2	40.6	38.9	38.0	37.2	29.02	-
4	-	41.7	40.1	38.5	37.1	28.86	-
5	-	41.0	41.5	38.9	37.6	28.50	-
6	47.7	40.5	40.1	38.8	37.0	29.15	-
7	47.3	43.9	40.5	39.0	37.3	.72	-
8	46.0	44.5	40.4	39.0	38.4	.96	31.68
9	47.0	46.3	42.3	39.9	38.8	.93	-
10	47.1	45.7	39.9	39.0	38.7	.68	-
11	47.9	40.0	39.3	38.8	38.6	.49	-
12	48.1	43.1	39.0	38.7	38.6	29.67	-
13	46.3	41.1	39.8	38.9	38.8	30.00	-
14	48.1	-	-	-	-	30.47	-
15	46.8	43.9	40.5	-	-	27.20	27.23
16	48.2	42.7	41.9	40.0	39.1	22.30	-
17	52.0	42.7	42.1	40.8	38.6	27.29	-
18	49.0	43.9	43.0	40.6	39.2	26.90	-
19	-	45.1	42.9	41.0	40.2	26.85	-
20	50.0	44.6	41.5	40.6	39.7	25.08	-
21	50.0	45.5	-	41.9	40.8	30.65	-
22	50.0	47.8	43.2	42.7	40.5	.84	31.35
23	48.0	47.3	44.9	41.0	40.6	30.81	-
24	48.9	48.9	44.7	41.9	41.2	31.56	-
25	51.2	50.3	45.8	43.2	43.1	30.95	-
26	50.0	46.4	45.7	43.6	41.9	28.90	-
27	51.5	46.2	44.9	43.6	41.6	28.13	-
28	54.5	45.0	44.7	43.4	41.9	27.65	31.34
29	52.5	44.6	44.2	43.6	41.5	29.23	-
30	50.5	44.8	44.5	43.0	40.8	29.21	-
31	-	-	-	-	-	-	-
Mean	48.7	44.2	42.0	40.6	39.5	28.91	30.10
July							
1	55.7	48.0	45.0	41.9	41.0	30.60	-
2	55.2	47.8	45.2	42.0	40.7	.67	-
3	56.0	46.3	44.0	41.9	40.8	.71	31.87
4	53.0	50.5	47.2	41.7	40.5	.88	-
5	53.6	49.8	44.3	42.3	41.2	.88	-
6	52.4	50.0	43.7	41.9	40.1	30.94	-
7	57.2	49.4	45.0	42.5	41.2	29.78	-
8	58.0	53.2	46.0	42.4	41.6	30.34	-
9	57.0	54.0	45.5	42.5	41.6	.38	-
10	58.2	52.0	46.9	42.8	42.0	.39	30.41
11	54.0	51.5	45.2	43.1	43.0	30.99	-
12	55.0	52.8	47.0	43.2	41.7	31.13	-
13	59.2	51.0	47.5	44.5	42.4	31.03	-
14	63.0	53.2	50.9	44.1	43.1	30.62	-
15	63.0	61.0	58.8	44.6	43.5	.77	-
16	-	-	-	-	-	.90	-
17	60.2	49.5	46.7	43.4	43.4	.92	31.87
18	62.0	54.8	49.9	44.5	43.5	.48	-
19	61.0	52.0	48.0	43.7	43.5	.56	-
20	-	-	-	-	-	30.54	-
21	63.7	53.8	51.0	44.6	43.5	29.72	-
22	61.6	52.3	48.2	44.0	43.4	30.97	-
23	58.0	51.8	48.2	44.0	-	32.04	-
24	61.3	53.6	49.0	44.3	41.8	30.55	-
25	62.6	52.5	49.0	44.5	42.0	.60	-
26	63.0	52.7	49.4	45.1	42.0	30.67	-
27	-	-	48.7	43.9	41.3	31.18	-
28	56.2	54.2	48.0	43.8	41.8	.15	-
29	58.7	49.2	47.0	43.0	-	31.16	-
30	62.0	52.1	48.6	44.1	-	30.98	-
31	58.3	55.4	51.7	43.9	43.0	31.10	31.99
Mean	58.5	51.9	47.8	43.4	42.1	30.76	31.54

Month and day	Temperature at depth of--					Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	0 ft.	150 ft.
June							
1	50.9	45.8	45.0	43.0	40.2	27.92	-
2	-	-	-	-	-	28.80	-
3	49.0	-	41.7	39.7	38.7	29.23	-
4	53.3	45.7	43.0	42.3	40.3	.12	-
5	52.1	44.9	43.4	42.0	-	.57	31.69
6	52.3	43.5	43.2	42.3	40.6	.52	-
7	55.7	43.5	43.2	42.3	41.0	.26	-
8	56.0	45.0	43.5	41.7	40.1	.25	-
9	56.4	44.5	43.7	42.3	41.3	.55	-
10	56.1	45.4	43.7	41.3	40.8	.66	-
11	-	-	-	41.8	40.8	.74	-
12	57.8	47.8	44.2	42.0	41.0	.73	31.77
13	-	45.5	43.8	42.6	42.0	.59	-
14	57.3	46.7	45.0	42.8	41.6	29.98	-
15	-	-	-	-	-	30.24	-
16	55.0	53.5	50.4	43.2	42.1	.77	-
17	56.0	51.8	46.5	42.6	42.2	.11	-
18	-	53.3	49.3	43.0	42.0	.28	-
19	57.0	55.5	49.7	43.2	42.0	.72	31.52
20	58.4	51.2	45.0	42.0	41.2	.20	-
21	57.5	51.3	45.3	42.0	41.2	.08	-
22	60.5	52.4	45.7	42.0	41.4	.11	-
23	-	-	-	-	-	.14	-
24	56.5	47.7	44.8	41.4	41.1	.32	-
25	55.0	48.5	44.3	41.5	41.3	.39	-
26	55.9	47.7	44.7	41.8	41.2	.54	31.59
27	56.8	48.0	43.7	41.1	40.4	.54	-
28	59.4	50.2	45.0	42.1	41.1	.55	-
29	56.9	49.5	44.0	41.4	40.5	.51	-
30	55.2	-	-	42.5	40.5	30.53	-
Mean	55.7	48.3	44.9	42.1	41.0	29.90	31.64
August							
1	-	-	50.2	44.6	42.4	30.87	-
2	58.7	54.9	47.8	42.9	40.7	.90	-
3	59.4	54.9	48.7	44.8	43.4	.90	-
4	60.9	58.0	50.2	45.0	-	.81	-
5	61.8	59.3	50.3	45.1	43.3	.96	-
6	61.5	53.0	49.0	45.0	43.7	30.99	-
7	63.0	60.1	50.9	45.0	42.8	31.06	31.83
8	57.5	53.5	48.0	45.6	43.3	.07	-
9	57.0	54.0	50.0	45.2	42.5	31.10	-
10	59.1	55.7	50.2	45.6	44.2	30.97	-
11	61.0	55.4	50.0	45.5	43.7	31.13	-
12	61.5	57.4	52.2	46.0	-	.06	-
13	62.4	57.7	53.0	46.9	44.0	.06	-
14	59.9	55.0	51.7	46.2	44.5	.16	32.00
15	58.1	56.9	52.5	46.6	44.8	.09	-
16	61.4	53.1	51.8	47.1	-	31.17	-
17	61.9	60.0	54.3	47.0	-	30.57	-
18	62.7	57.7	53.6	46.8	-	.67	-
19	62.1	54.3	51.3	47.2	-	.81	-
20	61.0	53.0	51.3	47.4	45.1	.70	-
21	61.6	54.0	51.0	47.6	43.9	30.89	32.11
22	60.8	53.9	51.1	46.7	44.0	31.02	-
23	60.1	56.1	53.9	48.5	-	30.96	-
24	61.2	54.2	50.5	48.4	-	30.90	-
25	61.1	55.0	50.4	47.4	-	31.09	-
26	59.5	56.0	52.3	47.6	-	.05	-
27	59.6	55.9	52.9	47.4	43.1	.08	-
28	60.0	54.6	52.4	47.0	-	.15	32.22
29	58.1	53.1	52.1	46.7	43.9	.19	-
30	57.7	53.2	51.0	46.4	44.2	.31	-
31	58.6	53.4	50.1	46.8	44.8	31.31	-
Mean	60.3	55.4	51.1	46.3	43.6	31.00	32.04

Table 3.--Portland Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[43°31.6' N., 70°05.5' W.; water depth: 150 feet]

Month and day	Temperature at depth of--					Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	0 ft.	150 ft.
September							
1	57.6	50.8	49.7	47.2	46.0	31.47	-
2	58.3	54.0	52.4	46.7	44.0	.45	-
3	60.4	59.1	53.9	47.0	45.2	.67	-
4	59.2	59.4	52.2	47.0	-	.62	32.17
5	60.2	-	-	-	-	.66	-
6	56.6	53.5	50.2	46.0	44.0	.32	-
7	58.5	53.9	51.2	47.7	45.0	.64	-
8	57.6	53.5	50.4	47.0	43.7	.61	-
9	56.9	53.6	50.6	46.8	43.7	.66	-
10	55.1	52.7	48.9	46.0	44.4	.68	-
11	55.6	53.8	51.3	45.4	43.7	31.72	32.37
12	-	-	-	-	-	-	-
13	55.0	54.0	53.3	48.0	-	31.64	-
14	56.2	55.4	54.6	51.7	-	.65	-
15	55.5	55.5	54.3	48.4	-	.62	-
16	55.2	54.8	54.5	50.8	-	.58	-
17	56.4	55.0	52.8	49.0	-	31.07	-
18	56.1	54.4	51.5	47.7	-	30.96	31.97
19	56.5	55.4	52.7	49.5	-	31.06	-
20	55.6	55.7	55.3	-	-	.59	-
21	55.6	55.3	54.7	49.8	48.0	.53	-
22	56.3	55.1	53.5	49.7	-	.45	-
23	55.5	55.3	52.6	49.8	-	.21	-
24	55.7	53.8	52.3	50.6	48.9	31.21	-
25	54.2	53.5	53.0	-	-	32.03	-
26	-	-	-	-	-	32.08	-
27	-	-	-	-	-	31.84	-
28	-	-	-	-	-	.58	-
29	-	-	-	-	-	.62	-
30	-	-	-	-	-	31.12	-
Mean	-	-	-	-	-	31.53	-
November							
1	-	-	-	-	-	-	-
2	50.8	50.7	50.9	51.0	-	31.39	-
3	50.5	50.6	50.9	51.0	50.6	.64	-
4	50.0	50.1	50.4	50.8	50.3	31.68	-
5	49.5	49.7	49.8	50.5	49.6	32.05	-
6	49.5	50.0	50.2	51.0	50.5	.24	32.73
7	49.0	49.4	49.8	51.0	49.0	.19	-
8	48.0	48.3	48.5	49.0	49.2	32.19	-
9	48.8	49.0	49.3	48.5	-	-	-
10	48.5	48.5	48.9	49.1	-	32.27	-
11	48.2	48.3	48.3	49.0	49.1	31.90	-
12	48.0	48.0	48.2	49.1	48.8	32.36	-
13	48.0	48.0	48.2	49.3	49.0	.13	-
14	47.0	47.1	47.8	48.1	48.1	.10	32.88
15	48.8	48.8	49.0	50.0	-	.03	-
16	48.9	49.0	49.1	50.6	49.4	.07	-
17	48.8	49.0	49.9	50.7	49.4	.17	-
18	48.5	48.5	48.8	49.4	48.5	.22	-
19	47.0	47.1	47.3	47.9	48.0	.42	-
20	47.9	47.4	47.1	47.9	48.0	.32	-
21	46.7	46.7	47.1	48.0	48.0	.20	32.19
22	46.8	46.8	47.1	47.3	47.7	.29	-
23	47.0	47.0	47.2	47.8	48.0	.32	-
24	47.5	47.5	47.2	47.3	-	.21	-
25	47.0	47.0	47.1	48.5	47.6	.32	-
26	47.0	46.9	46.9	47.9	-	.35	-
27	47.0	47.0	47.7	48.7	-	.27	33.07
28	47.5	47.8	47.9	48.0	48.0	.42	-
29	46.9	47.0	47.1	47.4	-	.38	-
30	47.3	47.3	47.8	48.5	-	32.45	-
Mean	48.2	48.2	48.5	49.1	48.8	32.16	32.72

Month and day	Temperature at depth of--					Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	0 ft.	150 ft.
October							
1	55.1	55.1	54.9	52.6	49.9	31.82	-
2	54.7	54.7	54.5	52.2	-	.50	32.39
3	55.2	54.5	53.2	51.8	48.4	.47	-
4	54.9	54.5	53.9	51.6	48.4	.63	-
5	55.5	54.9	53.8	51.3	48.1	.69	-
6	53.2	53.1	52.9	50.1	48.5	.59	-
7	53.1	53.1	52.8	51.1	48.8	.83	-
8	53.1	52.8	52.0	48.8	47.4	31.83	-
9	52.8	52.8	52.7	49.2	48.1	32.00	32.37
10	53.5	52.3	52.0	49.7	47.9	32.20	-
11	52.8	52.5	51.2	49.4	48.0	31.95	-
12	52.7	52.3	52.0	49.5	48.5	31.95	-
13	54.3	52.1	52.2	49.5	-	32.09	-
14	55.9	56.0	55.4	52.9	52.1	31.09	-
15	-	-	52.7	51.3	48.8	32.02	-
16	54.0	54.1	53.8	50.9	50.2	31.92	32.23
17	53.7	53.2	53.0	50.8	49.8	.76	-
18	55.4	54.7	53.3	51.3	50.7	.73	-
19	54.8	54.0	52.7	50.3	49.7	31.79	-
20	-	-	-	-	-	-	-
21	54.1	53.1	53.1	52.3	50.8	31.89	-
22	54.5	54.7	54.7	52.9	51.2	.86	-
23	54.5	54.5	53.7	51.7	-	.92	32.22
24	54.7	54.7	54.8	54.0	51.5	.92	-
25	53.9	54.0	53.1	51.9	51.2	31.96	-
26	53.6	53.5	53.5	52.0	51.0	32.00	-
27	52.9	52.7	52.4	52.0	50.8	32.00	-
28	51.0	51.0	51.0	50.2	-	31.98	-
29	52.0	52.0	51.9	51.7	50.7	32.31	-
30	-	-	-	-	-	31.85	-
31	51.2	51.3	51.6	51.9	51.9	32.00	-
Mean	53.8	53.5	53.1	51.2	49.7	31.85	32.30
December							
1	45.3	45.2	45.2	45.5	46.2	32.56	-
2	46.1	45.9	46.0	46.1	46.1	.72	-
3	46.3	46.3	46.4	46.5	-	.53	-
4	45.8	45.8	45.8	46.0	46.4	.52	32.92
5	45.5	45.4	45.5	45.5	46.2	.55	-
6	46.2	46.1	46.2	46.3	46.1	.51	-
7	45.5	45.3	45.5	45.9	46.4	.57	-
8	44.8	44.8	44.8	45.5	46.2	.54	-
9	43.8	44.1	44.1	44.2	45.5	.59	-
10	45.5	45.8	45.9	46.2	-	.81	-
11	43.5	43.6	43.7	43.9	44.5	32.85	32.80
12	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-
14	-	-	-	-	-	32.72	-
15	43.0	43.0	43.0	43.1	-	.71	-
16	43.8	43.9	43.9	43.8	43.5	.62	-
17	42.1	42.9	42.9	42.9	42.9	.66	-
18	42.5	42.6	42.9	-	-	.65	32.64
19	42.8	42.9	42.9	43.2	-	.69	-
20	42.1	43.2	43.0	43.0	-	.78	-
21	-	-	-	-	-	32.72	-
22	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-
24	-	-	-	-	-	32.74	-
25	-	-	-	-	-	.68	32.69
26	41.5	41.6	41.5	41.9	42.2	.67	-
27	40.2	40.3	40.3	41.2	-	.77	-
28	40.2	40.2	40.2	40.2	40.2	.74	-
29	39.5	39.5	39.6	39.8	39.9	.60	-
30	-	-	-	-	-	.68	-
31	40.9	40.8	40.9	41.0	-	32.71	-
Mean	43.5	43.6	43.6	43.9	-	32.66	32.76

Boston Lightship (fig. 4, table 4)--Surface water temperatures at Boston are somewhat puzzling in that they do not parallel conditions seen at Portland. Winter, spring, and early summer temperatures were above the mean, July below (as at Portland) and August-September again above. The maximum, however, was the second lowest for the 5-year period 1956-60. Bottom water temperatu were in no way unusual.

Surface salinity in May and June was lowest on record and occurred slightly l in the season than the Portland minim This probably reflects the southerly moven of surface water along the coast in this reg

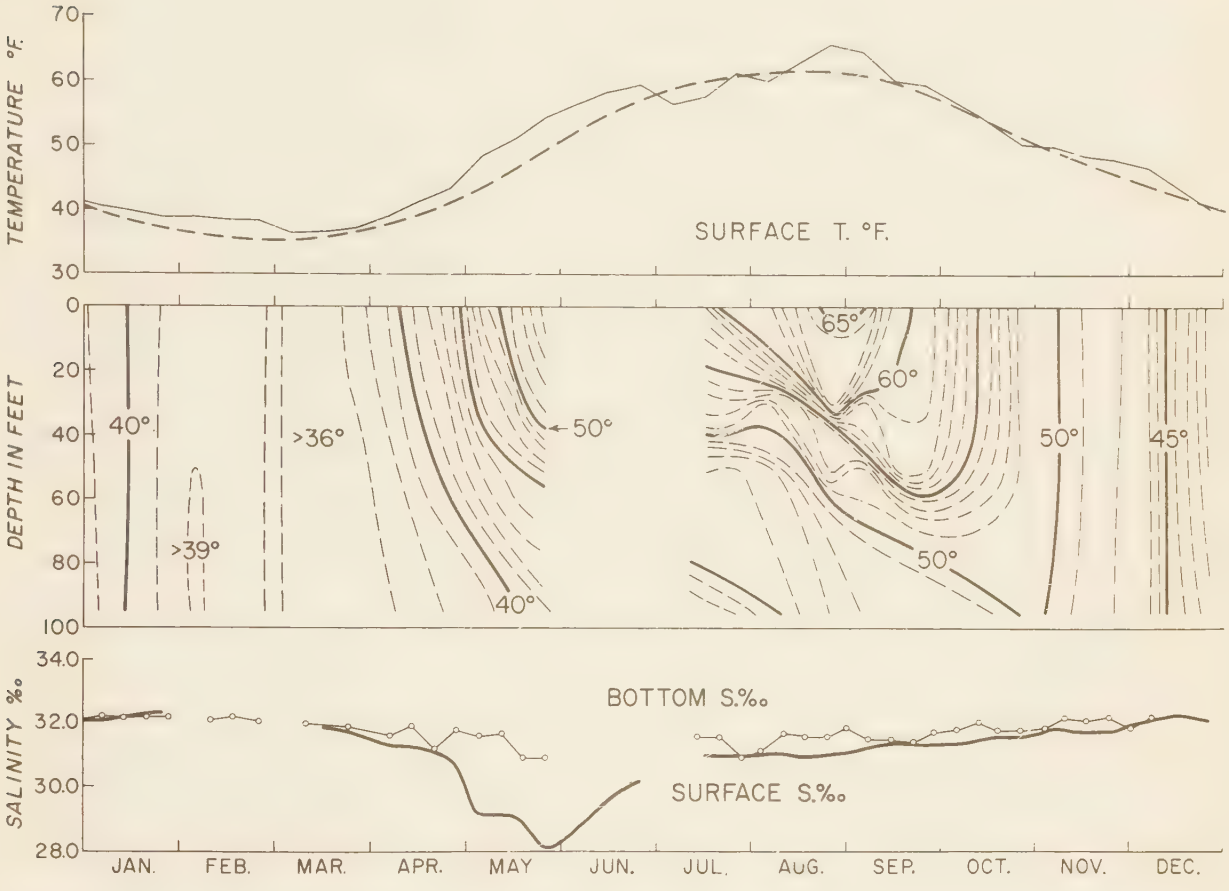

Figure 4.--Boston Lightship. (Dashed line in upper diagram mean for period 1925-41.)

Table 4.--Boston Lightship: temperature (° F.) and salinity (°/oo), 1960

[42°20.4' N., 70°45.5' W.; water depth: 96 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.		0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
January							February						
1	41.7	41.5	41.4	41.4	32.10	-	1	-	-	-	-	-	-
2	42.2	41.6	41.4	41.5	32.12	-	2	-	-	-	-	-	-
3	-	-	-	-	-	-	3	-	-	-	-	-	-
4	41.4	41.1	41.0	42.0	32.02	-	4	39.4	39.0	39.0	39.0	32.17	-
5	41.0	41.2	41.0	41.0	32.06	-	5	39.3	39.3	39.2	39.1	-	-
6	40.2	40.2	40.3	40.8	31.97	32.29	6	-	-	-	-	-	-
7	40.5	40.0	40.3	41.0	32.07	-	7	39.0	39.0	39.1	39.4	-	-
8	39.9	39.8	40.0	41.6	.41	-	8	-	-	-	-	-	-
9	39.3	39.3	39.3	39.3	.17	-	9	38.0	38.0	38.7	39.0	31.87	-
10	39.6	39.8	39.8	40.8	.03	-	10	38.9	38.7	39.0	39.0	32.16	32.15
11	40.1	40.0	40.0	40.0	.10	-	11	38.2	38.2	38.2	38.7	31.88	-
12	40.0	40.6	40.6	40.5	.19	-	12	38.6	39.7	38.9	39.1	31.95	-
13	41.1	40.7	40.5	40.4	.25	32.23	13	38.9	39.0	38.9	38.9	32.27	-
14	40.0	40.3	40.3	40.2	.24	-	14	38.8	38.8	38.8	38.7	32.12	-
15	-	-	41.1	40.5	.29	-	15	37.0	38.2	38.2	38.2	31.92	-
16	40.1	39.7	39.7	39.7	32.22	-	16	38.8	38.2	38.3	39.0	32.06	-
17	39.1	39.2	39.2	39.1	33.35	-	17	-	-	-	-	32.03	32.26
18	38.7	38.5	38.3	38.2	32.13	-	18	38.0	38.0	38.6	38.9	31.75	-
19	-	-	-	-	-	-	19	38.1	38.1	38.0	38.1	31.80	-
20	39.1	39.2	39.1	39.1	32.26	32.25	20	38.9	38.5	38.5	38.4	32.03	-
21	39.0	39.0	39.0	39.0	.23	-	21	38.2	38.2	38.2	38.2	.14	-
22	-	-	-	-	.24	-	22	38.8	38.6	38.4	38.8	.18	-
23	-	-	-	-	32.58	-	23	39.0	38.8	38.5	38.4	32.24	-
24	39.5	38.8	38.9	38.8	33.25	-	24	38.2	38.1	38.1	38.0	-	32.14
25	-	-	-	-	32.34	-	25	39.0	38.2	38.2	38.6	32.07	-
26	38.9	38.3	38.5	38.7	.43	-	26	-	-	-	-	-	-
27	38.7	38.4	38.4	38.3	32.23	32.23	27	38.0	38.0	38.0	38.0	32.08	-
28	-	-	-	-	-	-	28	37.2	37.2	37.2	37.2	.00	-
29	38.5	38.9	38.9	38.9	32.25	-	29	39.0	39.0	38.6	38.1	32.09	-
30	-	-	-	-	.19	-							
31	-	-	-	-	32.17	-							
Mean	39.9	39.8	39.9	40.0	32.27	32.25	Mean	38.5	38.4	38.5	38.6	-	-
March							April						
1	36.2	36.4	36.1	36.1	-	-	1	38.1	37.5	36.6	36.5	-	-
2	35.1	37.0	36.9	37.1	-	-	2	38.1	37.8	37.3	36.9	31.51	-
3	37.0	36.5	36.5	36.8	-	-	3	38.9	39.0	37.1	36.9	.43	-
4	-	-	-	-	-	-	4	39.1	38.8	37.0	36.9	.43	-
5	-	-	-	-	-	-	5	39.6	39.2	36.8	36.4	.58	-
6	36.3	36.3	36.2	36.1	-	-	6	38.9	38.8	38.2	36.8	31.59	31.67
7	36.5	36.1	36.1	36.0	-	-	7	39.0	38.1	38.0	37.0	-	-
8	36.3	36.2	36.1	36.1	-	-	8	39.2	38.3	37.6	36.5	-	-
9	37.9	37.1	37.3	37.5	31.80	-	9	39.9	38.8	38.0	36.8	31.01	-
10	36.7	36.2	36.3	36.3	31.94	32.02	10	39.2	38.5	38.4	37.0	.38	-
11	-	35.8	36.0	36.0	32.04	-	11	40.1	39.6	39.0	37.5	.66	-
12	37.0	36.0	35.9	35.8	.07	-	12	40.1	39.7	39.2	37.8	.28	-
13	36.4	36.4	36.2	36.1	.00	-	13	39.7	38.8	38.9	37.2	.34	31.97
14	36.3	36.2	36.1	36.1	32.01	-	14	41.0	40.5	40.1	37.1	.48	-
15	36.1	36.1	36.0	36.0	31.99	-	15	-	40.6	38.2	37.7	.30	-
16	36.7	36.4	36.3	36.0	32.00	31.95	16	42.5	40.0	38.0	37.5	.30	-
17	36.8	36.1	36.2	-	31.71	-	17	43.2	40.8	38.2	37.7	.21	-
18	36.2	36.0	36.0	36.1	.83	-	18	42.9	42.5	40.0	37.8	.08	-
19	36.8	36.7	36.5	-	.93	-	19	40.9	40.3	40.2	37.5	.29	-
20	37.0	36.9	36.9	-	.93	-	20	42.0	40.2	39.0	36.9	.25	31.26
21	36.5	36.3	36.1	36.1	.86	-	21	42.9	41.6	41.4	-	.32	-
22	-	-	-	-	.85	-	22	43.3	41.2	39.5	37.7	.26	-
23	-	-	-	-	.88	31.94	23	42.6	40.9	39.6	37.9	.03	-
24	37.0	36.9	36.9	36.9	.93	-	24	43.1	41.5	39.8	37.9	.06	-
25	37.7	37.3	37.1	37.0	.85	-	25	43.1	41.4	39.5	-	31.18	-
26	36.9	36.7	36.6	36.6	.84	-	26	44.0	41.1	39.8	38.0	30.98	-
27	37.0	36.8	36.8	36.8	.86	-	27	44.0	41.9	40.3	38.1	.90	31.84
28	37.5	37.0	37.0	37.0	.77	-	28	44.0	43.2	43.5	39.0	.75	-
29	36.6	36.3	36.1	36.0	.79	-	29	43.3	42.9	42.7	-	.75	-
30	38.0	37.2	37.2	36.9	.46	-	30	45.1	44.4	44.0	39.7	30.45	-
31	38.7	38.3	37.2	37.0	31.47	-							
Mean	36.8	36.6	36.5	36.4	-	-	Mean	41.3	40.3	39.2	37.4	31.21	31.68

Table 4.--Boston Lightship: temperature (° F.) and salinity (°/oo), 1960.--Continued

[42°20.4' N., 70°45.5' W.; water depth: 96 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.		0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
May							June						
1	45.0	43.4	42.2	39.3	28.96	-	1	-				-	-
2	46.7	44.5	41.7	38.8	.40	-	2	-				-	-
3	48.0	46.7	42.5	38.2	28.40	-	3	59				28.27	-
4	47.9	46.5	41.8	38.5	29.40	31.67	4	54				.80	-
5	48.0	46.7	42.6	38.0	.38	-	5	55				.40	-
6	48.2	46.8	42.5	38.2	29.17	-	6	56				.33	-
7	51.4	50.5	48.5	39.0	28.40	-	7	59				28.47	-
8	49.3	48.5	40.7	39.0	30.05	-	8	56.5				29.03	-
9	52.8	52.0	50.8	40.2	30.10	-	9	57				.10	-
10	49.2	42.0	40.4	38.7	29.91	-	10	56				.44	-
11	50.2	46.3	39.8	-	30.01	31.72	11	57				.62	-
12	53.0	42.5	40.6	39.3	29.83	-	12	58				.39	-
13	49.4	44.7	41.6	40.0	29.58	-	13	59				.32	-
14	50.6	43.2	40.1	39.0	28.50	-	14	58				.51	-
15	48.8	42.1	41.2	39.0	28.63	-	15	57				.70	-
16	52.2	51.7	50.7	40.0	29.47	-	16	56				.72	-
17	53.7	52.8	52.4	40.5	.98	-	17	58				.78	-
18	50.2	49.2	43.0	40.0	29.14	30.99	18	61				.65	-
19	50.9	49.0	44.9	40.5	28.89	-	19	62				.66	-
20	52.8	48.8	47.5	40.9	27.86	-	20	59				29.91	-
21	52.8	49.6	46.6	40.3	27.84	-	21	60				30.04	-
22	54.4	53.0	49.4	41.1	28.51	-	22	59				29.84	-
23	54.0	53.2	48.6	41.0	.53	-	23	61				30.06	-
24	52.1	50.7	47.0	41.5	.49	-	24	63				.04	-
25	53.0	51.3	50.5	41.0	.11	30.99	25	59.5				.17	-
26	54.4	53.1	52.6	41.0	28.13	-	26	59				.44	-
27	55.1	50.7	50.4	39.0	27.86	-	27	60				.50	-
28	55.8	51.6	50.0	41.8	28.01	-	28	58				.54	-
29	57.0	52.2	49.4	41.4	27.90	-	29	57				.60	-
30	56.3	47.9	46.6	-	28.11	-	30	60.5				30.66	-
31	-	-	-	-	28.19	-							
Mean	51.4	48.4	45.6	39.8	28.83	31.34	Mean	58.4				29.61	-
July							August						
1	58						1	60.2	48.8	45.5	44.2	31.12	-
2	57						2	-	-	-	-	.11	-
3	59						3	60.9	48.5	45.7	44.2	.16	31.20
4	57						4	59.3	49.0	45.0	44.3	.19	-
5	56						5	60.7	53.0	46.0	45.0	.19	-
6	55						6	60.9	58.0	50.9	43.5	.18	-
7	57						7	59.6	50.4	46.9	44.5	.20	-
8	54						8	61.2	49.7	47.5	45.1	31.09	-
9	57.8	50.3	44.5	42.9	31.04	-	9	-	49.0	46.9	45.1	30.94	-
10	55.7	46.3	44.7	42.3	.14	-	10	59.8	50.9	47.7	45.1	31.00	31.73
11	55.8	47.3	45.0	43.0	.20	-	11	60.0	51.0	47.7	45.1	.04	-
12	59.0	47.7	44.3	43.0	.15	-	12	62.0	50.3	47.4	45.2	.04	-
13	57.0	49.3	46.7	42.2	31.22	31.66	13	64.0	53.1	48.7	45.9	.11	-
14	57.8	50.7	48.0	42.8	30.94	-	14	64.1	53.6	49.0	46.0	.04	-
15	57.0	54.4	47.0	-	31.05	-	15	63.8	54.0	47.9	46.2	.05	-
16	57.0	52.0	47.7	43.2	.07	-	16	63.6	56.0	48.2	46.2	.05	-
17	61.0	59.3	46.0	43.9	.10	-	17	63.4	53.0	47.6	46.0	.09	31.67
18	62.4	56.2	44.1	43.7	.02	-	18	63.5	54.9	50.3	45.9	.01	-
19	59.8	53.2	46.0	43.2	31.07	-	19	64.0	63.5	56.1	47.2	31.05	-
20	61.0	57.9	47.3	43.3	30.96	31.61	20	64.7	63.1	50.1	47.2	30.84	-
21	62.7	51.0	45.0	43.6	31.01	-	21	65.9	63.0	51.0	45.8	31.23	-
22	-	-	-	-	30.96	-	22	67.1	64.0	51.5	47.2	30.95	-
23	63.5	56.2	44.6	43.2	31.05	-	23	68.0	61.1	50.1	-	31.00	-
24	64.2	54.0	45.0	43.0	.04	-	24	66.5	66.0	59.1	49.0	.11	31.66
25	65.7	53.0	44.6	43.2	.00	-	25	65.1	64.8	62.0	-	.17	-
26	-	-	-	-	.03	-	26	65.6	65.0	58.5	49.0	.06	-
27	60.5	48.2	45.3	43.0	.04	30.99	27	65.1	64.2	53.1	-	.06	-
28	58.7	49.1	44.2	42.5	.03	-	28	65.2	63.0	51.8	-	.08	-
29	61.0	51.0	45.9	42.1	.16	-	29	66.9	61.8	50.8	48.0	.16	-
30	-	-	-	-	.16	-	30	66.7	60.0	50.7	46.5	.17	-
31	56.0	54.9	52.7	43.3	31.15	-	31	64.1	60.0	48.7	43.5	31.15	31.91
Mean	58.4	-	-	-	-	-	Mean	63.5	55.9	49.9	45.8	31.09	31.63

Table 4.--Boston Lightship: temperature (° F.) and salinity (°/oo), 1960.--Continued

[42°20.4' N., 70° 45.5 'W.; water depth: 96 feet]

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
September						
1	68.0	58.3	-	-	31.19	-
2	68.5	59.0	52.2	48.5	.19	-
3	65.8	56.9	52.0	48.8	.20	-
4	65.8	55.5	47.8	47.0	.25	-
5	65.0	63.1	49.0	48.2	.23	-
6	62.2	61.3	58.7	49.2	.23	-
7	-	-	-	-	.26	31.55
8	64.8	55.3	49.5	47.5	.25	-
9	62.2	54.7	50.8	46.5	.26	-
10	62.7	55.5	51.0	-	.32	-
11	62.0	60.8	58.7	-	31.31	-
12	-	-	-	-	-	-
13	62.2	61.4	59.3	49.2	31.59	-
14	60.1	60.0	59.8	-	.57	31.54
15	60.2	59.0	58.3	-	.58	-
16	60.5	59.3	58.0	-	.64	-
17	60.2	58.7	57.4	-	.31	-
18	60.7	59.3	58.7	-	.32	-
19	59.3	58.4	56.5	-	.62	-
20	59.5	59.2	58.0	54.0	.49	-
21	59.1	59.2	59.0	-	.54	31.48
22	-	-	-	-	.52	-
23	60.5	59.0	57.3	-	.20	-
24	59.3	58.2	57.2	54.4	.08	-
25	59.3	59.2	59.0	-	.38	-
26	59.9	59.9	59.0	-	.31	-
27	59.9	59.5	56.9	-	.39	-
28	57.6	57.5	56.0	-	.35	31.79
29	60.1	60.0	59.8	-	.34	-
30	61.0	60.5	58.6	55.5	31.16	-
Mean	61.7	58.8	56.1	-	31.35	31.59
November						
1	51.8	51.8	51.8	51.2	31.84	-
2	49.9	49.9	49.9	48.5	.99	-
3	51.7	51.8	51.8	51.4	.83	31.90
4	50.9	50.9	51.0	51.0	.88	-
5	49.8	49.9	49.8	48.3	.90	-
6	49.8	49.9	49.9	48.5	.89	-
7	50.5	50.6	50.6	50.5	.91	-
8	50.0	50.0	50.1	-	.91	-
9	50.1	50.1	50.1	48.5	.94	32.22
10	49.9	49.9	49.9	49.9	.87	-
11	49.8	49.8	49.8	49.7	.88	-
12	49.4	49.5	49.6	48.6	.87	-
13	48.9	48.9	49.0	49.0	.68	-
14	49.9	49.8	49.8	-	.84	-
15	47.7	47.9	48.0	48.0	.81	-
16	48.0	47.9	48.0	48.0	.64	32.13
17	49.5	49.4	49.3	47.9	.71	-
18	49.2	49.2	49.2	47.8	.80	-
19	49.0	49.2	49.2	48.0	.77	-
20	47.9	48.0	48.1	48.0	.98	-
21	49.0	49.0	49.1	48.4	.87	-
22	49.5	49.6	49.7	47.9	.89	-
23	49.2	49.2	49.2	47.9	.92	32.24
24	48.7	48.7	48.2	48.0	.92	-
25	48.2	48.5	48.5	-	.95	-
26	47.8	47.8	47.9	47.8	.80	-
27	47.6	47.8	47.8	47.8	.80	-
28	47.6	48.0	48.0	48.0	.90	-
29	47.8	47.9	48.1	47.9	.90	-
30	47.3	47.4	47.4	47.8	31.85	31.93
Mean	49.2	49.3	49.3	48.7	31.86	32.09

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
October						
1	57.8	57.3	56.2	-	31.16	-
2	57.6	57.4	57.2	-	31.17	-
3	57.4	57.0	56.5	-	-	-
4	58.1	57.9	57.7	-	31.22	-
5	58.0	57.8	57.6	-	.26	31.87
6	56.8	56.9	56.0	-	.31	-
7	57.1	56.1	51.6	-	.40	-
8	56.0	55.9	55.0	-	.49	-
9	55.8	55.7	55.1	-	.57	-
10	55.3	54.6	51.5	-	.63	-
11	56.3	55.5	52.0	-	.58	-
12	54.8	55.1	53.2	-	.66	32.08
13	54.9	54.9	54.1	49.0	.73	-
14	55.5	55.1	55.0	49.0	.61	-
15	55.8	56.0	55.0	49.4	.55	-
16	52.9	53.0	52.6	48.4	.62	-
17	51.9	52.6	52.3	47.5	.65	-
18	53.2	53.3	53.0	48.4	.55	31.82
19	53.0	53.5	53.1	49.0	.57	-
20	52.5	52.3	52.6	-	.56	-
21	52.0	52.7	52.7	-	.55	-
22	50.0	50.4	50.5	-	.48	-
23	50.2	50.6	50.7	-	.49	-
24	-	50.2	50.3	-	.74	-
25	50.1	50.2	50.3	47.5	.77	31.82
26	51.0	50.6	50.0	47.8	.70	-
27	50.9	51.1	51.1	-	.70	-
28	50.7	51.0	51.0	50.9	.70	-
29	-	-	-	-	.70	-
30	50.6	50.9	51.0	-	31.78	-
31	50.0	50.7	50.8	-	-	-
Mean	54.0	53.9	53.2	-	31.55	31.90
December						
1	46.0	47.7	47.8	48.0	-	-
2	47.3	47.4	47.5	47.5	32.08	-
3	48.0	48.2	48.3	48.7	.18	-
4	47.7	47.9	48.0	48.1	.14	-
5	47.9	47.8	47.9	48.2	.20	-
6	48.0	48.0	48.1	48.2	.22	-
7	47.1	47.1	47.3	-	.06	32.27
8	47.1	47.2	47.2	47.2	.26	-
9	46.0	46.3	46.5	-	.16	-
10	46.0	46.1	46.4	47.0	32.31	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	44.3	44.4	44.5	44.5	32.36	-
15	44.8	44.9	44.9	44.9	.27	-
16	45.1	45.2	45.3	45.4	.30	-
17	44.2	44.3	44.3	44.8	.33	-
18	43.7	43.9	43.9	44.1	.33	-
19	43.7	43.8	43.9	44.0	.32	-
20	40.1	40.2	40.3	42.3	.31	-
21	40.0	40.1	40.3	42.1	.32	-
22	42.4	43.0	43.0	43.0	.30	-
23	39.6	39.9	41.0	42.5	.06	-
24	40.8	41.0	41.0	43.2	.11	-
25	40.5	40.6	40.7	43.0	.11	-
26	40.0	40.0	40.2	42.1	.11	-
27	40.0	40.0	40.2	42.2	.10	-
28	40.0	40.1	40.2	40.7	.10	32.19
29	40.9	40.7	41.0	41.9	.29	-
30	40.5	40.7	40.9	43.1	.24	-
31	-	-	-	-	32.27	-
Mean	43.8	43.9	44.1	44.7	32.22	-

Georges Shoal, Texas Tower #2 (fig. 5, table 5)--The minimum temperature in early March equaled the low of the year before. The winters of 1957 and 1958 had been warmer. Warming was slower than it had been in previous years through June, after which time readings were comparable to those of 1956-59.

Salinity showed little departure from normal.

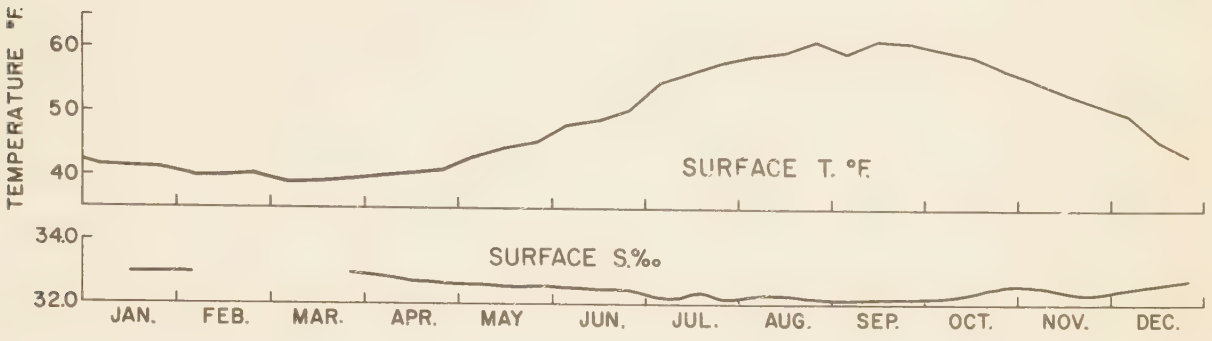

Figure 5.--Georges Shoal, Texas Tower #2.

Table 5.--Georges Shoals, Texas Tower 2: temperature (° F.) and salinity (°/oo), 1960

[41°41' 16.3" N., 67°45' 36.2" W.; water depth: 56 feet]

Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity
January			February			March			April		
1	42.3	-	1	40.4	32.98	1	39.2	-	1	39.8	32.88
2	42.2	32.65	2	40.0	32.95	2	38.6	-	2	39.4	.89
3	42.6	-	3	40.0	-	3	38.4	-	3	39.8	32.89
4	41.9	-	4	39.0	32.91	4	38.1	-	4	40.1	-
5	41.7	32.92	5	40.5	32.93	5	38.0	-	5	40.5	-
6	41.6	.75	6	40.7	-	6	38.7	32.89	6	40.4	32.84
7	41.7	32.80	7	40.1	32.89	7	40.0	33.04	7	40.0	.82
8	41.5	-	8	39.8	.94	8	39.8	32.84	8	39.9	.80
9	40.5	-	9	40.3	32.89	9	39.4	-	9	40.0	.80
10	40.3	33.02	10	40.3	-	10	39.3	33.03	10	39.8	.75
11	41.2	32.87	11	40.4	-	11	39.0	-	11	39.9	.76
12	41.8	.94	12	39.9	-	12	39.0	33.11	12	40.4	.79
13	42.0	.87	13	39.2	32.95	13	39.4	-	13	40.1	.74
14	42.2	.90	14	39.4	-	14	39.2	-	14	40.7	.70
15	42.4	.92	15	39.1	-	15	39.1	32.92	15	40.6	.70
16	42.0	.91	16	39.0	32.87	16	38.9	32.91	16	40.3	.73
17	41.1	.94	17	40.2	32.91	17	38.7	-	17	40.4	.70
18	40.5	32.93	18	41.4	33.01	18	38.9	32.94	18	40.8	.66
19	41.5	33.09	19	41.6	-	19	39.2	33.01	19	40.8	.64
20	40.6	33.07	20	40.5	-	20	39.9	.02	20	40.7	.50
21	41.0	32.93	21	39.6	-	21	39.8	.04	21	41.3	.57
22	41.7	.97	22	40.0	32.96	22	39.8	33.12	22	41.1	.60
23	41.5	.97	23	40.4	33.13	23	39.4	-	23	40.8	.56
24	41.5	.95	24	40.6	.03	24	39.4	32.94	24	40.6	.60
25	41.6	.96	25	41.1	33.03	25	39.2	-	25	40.8	.57
26	41.4	.96	26	41.0	-	26	38.8	33.01	26	40.4	.66
27	41.1	32.92	27	40.3	-	27	39.0	32.91	27	40.4	.69
28	41.4	33.0	28	40.0	-	28	39.3	.94	28	40.8	.65
29	41.4	32.95	29	39.8	-	29	39.4	.95	29	41.7	.59
30	41.3	33.01				30	39.9	.90	30	42.0	32.60
31	40.4	32.93				31	40.0	32.90			
Mean	41.5	32.93	Mean	40.2	-	Mean	39.2	-	Mean	40.5	32.70

Table 5.--Georges Shoals, Texas Tower 2: temperature (° F.) and salinity (°/oo), 1960--Continued

[41°41' 16.3" N., 67°45' 36.2" W.; water depth: 56 feet]

Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity
									August		
1	42.6	32.56	1	46.8	32.48	1	53.6	32.24	1	[illegible]	32.1[illegible]
2	43.0	.67	2	47.4	.49	2	54.0	.15	2	[illegible]	.[illegible]
3	43.6	.67	3	48.2	.48	3	54.8	.17	3	[illegible]	.21
4	43.6	.56	4	48.3	.49	4	55.1	.16	4	[illegible]	.[illegible]
5	43.2	.54	5	48.3	.50	5	54.8	.30	5	[illegible]	.31
6	43.2	.54	6	48.2	.50	6	55.2	.28	6	[illegible]	.[illegible]
7	43.2	.57	7	48.1	.49	7	55.2	.06	7	[illegible]	.22
8	43.0	.58	8	48.4	.48	8	55.2	.10	8	[illegible]	.20
9	43.0	.59	9	48.6	.48	9	55.5	.16	9	[illegible]	.[illegible]
10	42.9	.58	10	49.0	.42	10	56.1	.14	10	[illegible]	.33
11	43.3	.64	11	48.5	.38	11	56.3	.34	11	59.6	.21
12	43.5	.60	12	48.8	.38	12	56.9	.32	12	59.4	.20
13	43.6	.58	13	49.2	.47	13	56.8	.34	13	59.4	.24
14	43.6	.60	14	48.8	.46	14	56.7	.36	14	59.5	.31
15	44.3	.51	15	48.7	.44	15	56.4	.49	15	59.6	.28
16	44.5	.53	16	48.7	.46	16	56.6	.23	16	59.5	.23
17	44.1	.55	17	49.0	.49	17	56.4	.22	17	59.2	.16
18	45.3	.58	18	49.2	.43	18	56.6	.31	18	59.2	.19
19	45.4	.47	19	49.3	.45	19	56.8	.20	19	60.2	.19
20	46.2	.55	20	49.0	.44	20	57.2	.20	20	62.4	.16
21	45.8	.51	21	49.4	.44	21	57.4	.18	21	62.8	.14
22	45.1	.52	22	49.5	.43	22	57.5	.19	22	61.2	.16
23	45.0	.53	23	49.6	.43	23	57.7	.17	23	61.4	.18
24	44.9	.55	24	49.6	.38	24	57.9	.21	24	60.7	.26
25	45.0	-	25	50.2	.36	25	58.0	.25	25	60.8	.17
26	45.0	.60	26	50.2	.42	26	58.0	.19	26	61.2	.18
27	44.9	.60	27	49.9	.46	28	58.0	.15	27	61.5	.19
28	45.5	.50	28	50.7	.46	28	58.2	.10	28	62.3	.23
29	45.9	.50	29	52.6	.30	29	58.7	.09	29	62.4	.23
30	46.4	.49	30	53.5	32.26	30	59.0	.10	30	61.7	.22
31	46.3	32.49				31	58.6	32.16	31	61.1	32.17
Mean	44.4	32.56	Mean	49.2	32.44	Mean	56.6	32.21	Mean	60.2	32.22
September			October			November			December		
1	60.4	32.17	1	60.9	32.14	1	57.5	32.53	1	50.7	32.42
2	60.1	.12	2	60.6	.18	2	57.4	.56	2	49.9	.44
3	59.8	.17	3	60.9	.16	3	57.1	.54	3	50.5	.47
4	59.3	.20	4	60.7	.16	4	56.0	.50	4	51.1	.45
5	59.2	32.16	5	60.1	.24	5	56.1	.40	5	50.8	.46
6	58.9	-	6	60.5	.15	6	54.4	.52	6	50.8	.49
7	58.6	32.14	7	60.3	.21	7	54.0	.70	7	51.2	.52
8	59.6	.12	8	60.0	.29	8	53.9	.47	8	50.2	.58
9	60.5	.15	9	60.0	.28	9	54.7	.47	9	48.5	32.63
10	61.5	.13	10	59.6	32.24	10	55.0	.44	10	48.1	-
11	61.7	.14	11	60.1	-	11	53.6	.44	11	48.1	32.75
12	61.8	.12	12	59.5	-	12	53.0	.43	12	47.6	-
13	61.6	.13	13	58.9	32.32	13	53.0	.42	13	46.8	-
14	61.2	.11	14	59.2	.40	14	53.7	.38	14	46.9	-
15	61.4	.13	15	59.1	.36	15	53.7	.39	15	45.5	-
16	61.7	.13	16	59.2	.34	16	54.6	.38	16	46.8	-
17	61.8	.19	17	59.7	.38	17	54.5	.34	17	44.5	-
18	61.8	.17	18	59.7	.35	18	53.7	.38	18	44.8	-
19	62.4	.14	19	59.3	.42	19	53.4	.35	19	45.7	-
20	63.0	.17	20	59.6	.26	20	53.1	.37	20	44.5	32.68
21	62.2	.07	21	58.1	.34	21	53.0	.36	21	44.8	.71
22	62.1	.07	22	57.1	.35	22	52.8	.37	22	43.8	.70
23	61.6	.09	23	57.8	.34	23	52.3	.35	23	43.8	.70
24	61.6	.10	24	58.4	.41	24	52.0	.37	24	43.4	.76
25	61.2	.12	25	56.9	.39	25	51.4	.36	25	44.2	.72
26	61.2	.15	26	56.4	.79	26	51.5	.37	26	44.3	.76
27	61.0	.15	27	57.4	.75	27	52.0	.35	27	43.6	.76
28	61.2	.14	28	57.0	.74	28	52.0	.38	28	42.0	.75
29	61.2	.16	29	56.9	.63	29	51.8	.36	29	43.0	.74
30	61.2	32.12		56.9	.61	30	51.4	32.36	30	43.4	.70
			30	57.0	32.56				30	--	32.70
Mean	61.0	32.14	Mean	59.0	32.37	Mean	53.8	32.42	Mean	46.[illegible]	-

Nantucket Shoals, Texas Tower #3 (fig. 6, table 6)--The winter minimum of 36.4 °F. was the coldest since the record began here in 1958. Warming appeared to be slow through mid-July. August through October paralleled conditions seen in 1958 and 1959, but November and December were considerably warmer.

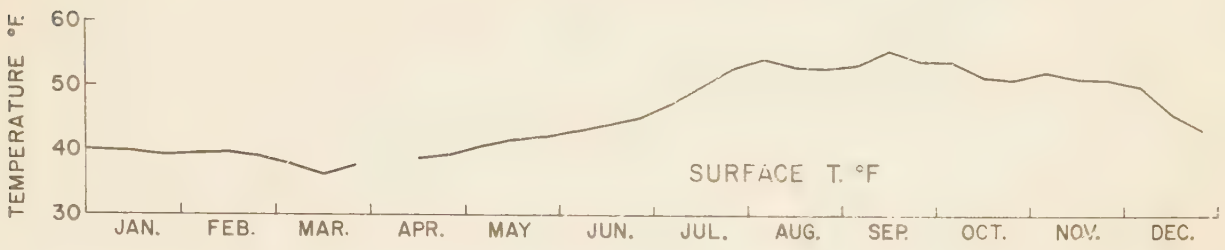

Figure 6.--Nantucket Shoals, Texas Tower #3.

Table 6.--Nantucket Shoals, Texas Tower 3: Surface water temperature (° F.)
1960

[41°00' 52" N., 69°29' 37" W.]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39.9	39.3	-	-	40.0	42.8	-	54.1	53.4	54.2	52.8	51.2
2	40.2	39.4	38.5	-	39.9	43.0	45.8	54.6	53.4	53.9	53.0	51.3
3	-	-	37.9	-	40.0	43.1	46.2	54.2	53.3	54.4	52.8	51.0
4	-	39.4	-	-	40.0	43.0	46.4	54.8	53.2	53.8	52.8	50.7
5	40.2	39.5	38.1	-	40.4	42.9	46.6	54.4	53.2	54.1	52.7	50.6
6	39.7	39.8	38.2	-	41.0	43.2	47.2	54.4	53.4	54.7	52.7	50.6
7	40.1	40.1	38.0	-	40.8	43.3	47.6	54.6	53.4	54.8	52.0	50.5
8	40.2	39.2	38.2	38.5	41.2	43.6	48.7	54.4	53.3	53.9	51.8	49.5
9	-	39.7	37.4	38.3	41.0	43.8	48.8	54.4	53.9	53.4	51.5	48.4
10	38.7	40.4	37.0	38.3	41.6	43.8	49.0	54.2	54.2	53.0	51.8	47.4
11	39.0	40.7	36.6	37.9	41.2	43.8	49.0	54.1	54.1	52.6	51.5	46.8
12	-	40.1	36.0	37.5	41.6	43.8	49.6	53.6	54.2	52.8	51.4	46.9
13	38.9	39.2	36.1	38.4	41.6	44.0	50.0	53.2	55.0	52.3	51.1	46.7
14	40.0	-	36.2	39.1	41.6	44.0	50.0	53.2	54.0	52.3	51.4	46.3
15	40.8	-	36.1	39.3	41.3	44.1	50.0	53.2	56.4	52.0	51.4	46.0
16	-	39.1	36.1	39.3	41.8	44.1	50.3	53.4	57.9	51.8	51.8	46.2
17	-	39.1	36.1	39.1	41.8	44.0	50.3	52.9	57.0	51.6	51.6	45.6
18	39.8	39.5	36.7	39.4	41.6	44.1	50.4	52.4	56.6	51.4	51.6	45.5
19	40.3	40.1	36.8	38.9	41.9	44.2	50.7	52.2	56.2	50.5	51.2	45.1
20	-	-	36.8	39.2	42.8	44.4	50.5	52.6	55.7	49.8	51.2	43.9
21	39.3	-	37.1	39.0	43.1	44.5	50.6	52.8	54.8	49.4	51.3	44.1
22	38.8	39.2	37.0	39.1	41.8	44.6	51.2	52.8	54.3	48.9	51.4	44.3
23	38.8	39.2	37.0	38.6	41.9	44.4	51.2	52.7	53.8	48.6	50.9	43.5
24	38.6	38.6	37.3	39.0	41.8	44.7	52.2	52.5	53.4	48.6	50.8	42.8
25	39.4	39.1	37.4	39.1	41.9	45.2	52.5	52.9	53.9	50.6	51.0	43.5
26	39.8	-	37.0	39.6	41.8	45.4	53.0	53.0	54.6	52.6	51.2	43.9
27	39.7	-	38.2	40.1	41.9	45.7	53.3	53.0	54.0	53.3	51.0	43.8
28	39.7	-	38.2	40.0	42.5	45.7	53.8	53.2	54.2	53.1	51.1	43.0
29	39.6	39.2	38.4	39.9	42.6	45.8	54.2	53.6	54.2	52.7	51.0	43.1
30	39.4		39.2	39.8	42.6	45.4	54.2	53.9	54.1	53.0	51.1	42.8
31	39.4		-		42.6		54.3	53.0		52.6		42.6
Mean	39.6	39.5	37.3	-	41.5	44.1	50.3	53.5	54.4	52.3	51.6	46.4

Nantucket Lightship (fig. 7, table 7)--Surface temperatures were below the mean except in late August. This has held true since this program started in 1956 and may be attributed to a change in station position for this lightship. The mean is based on the record from 1947 to 1952 when the station was some 8 miles WSW of the present position.

It is unfortunate that the winter observations were too thin during the cold period in February to allow comparison with similar cold conditions seen in 1957.

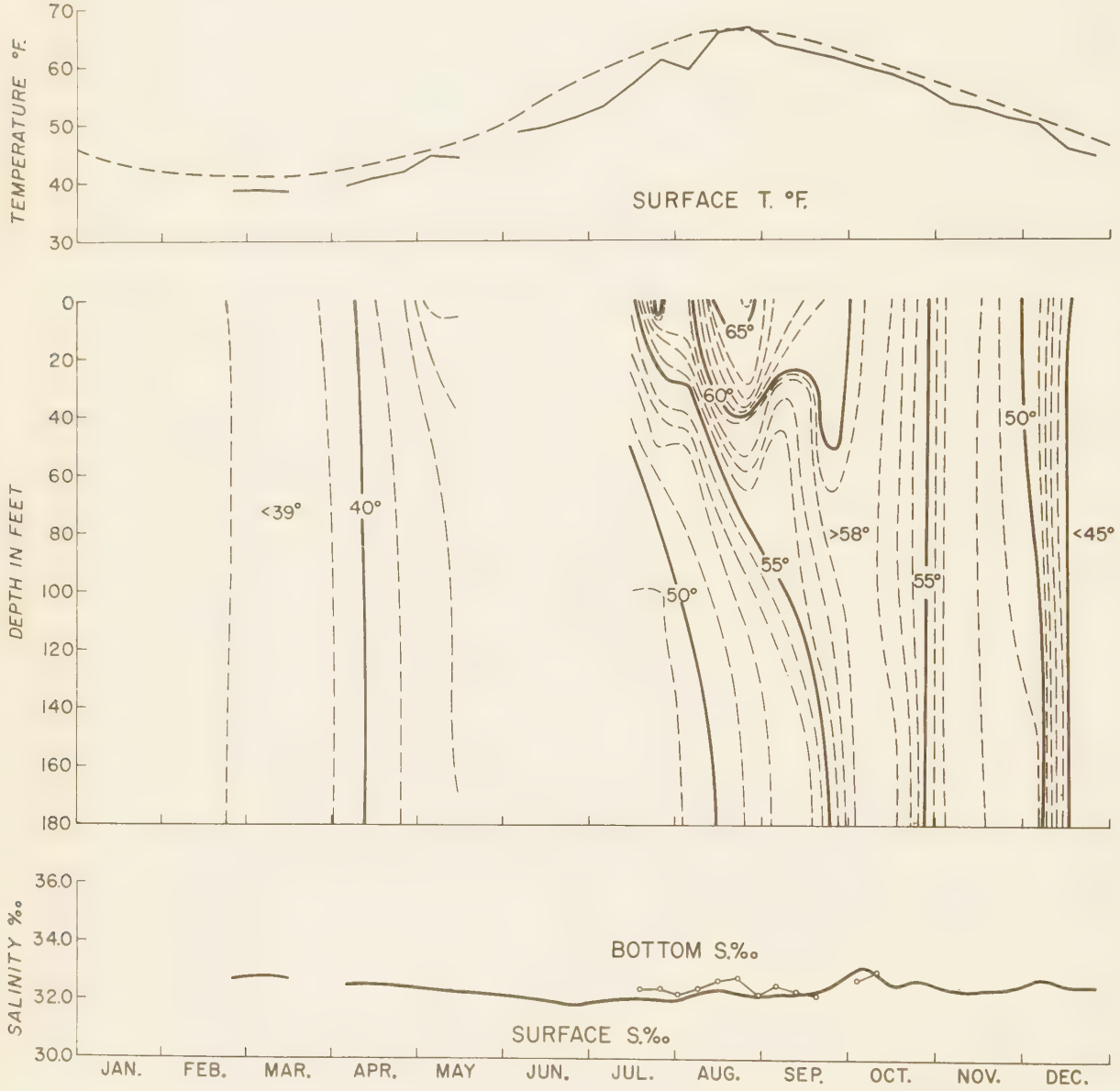

Figure 7.--Nantucket Lightship. (Dashed line in upper diagram mean for period 1947-52.)

Table 7.--Nantucket Lightship: temperature (° F.) and salinity (°/oo), 1960

[40°33' 00" N., 69°28' 00" W.; water depth: 192 feet]

Month and day	Temperature at depth of--						Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
January								
1								
2	44.6	44.3	44.1	44.0	43.7	43.3	32.65	
3								
4	45.0	45.1	45.1	45.0	44.9	44.8	32.52	
5	45.2	45.1	45.0	45.0	45.0	45.0	.53	
6	43.0	43.2	43.2	43.2	43.1	43.0	.58	
7	43.3	43.4	43.6	43.3	43.2	43.1	32.64	
8								
9								
10								
11							32.66	
12								
13								
14								
15								
16								
17								
18								
19								
20								
21	39.0	39.6	39.6	39.5	39.4	39.3	32.77	
22								
23	40.5	40.8	40.9	40.8	40.7	40.7	32.62	
24							.84	
25	40.7	40.8	40.8	40.9	40.6	40.3	.58	
26							80	
27							.76	
28							32.74	
29							-	
30							32.82	
31							-	
Mean								
March								
1	-	-	-	-	-	-	-	-
2	36.4	37.1	37.1	37.1	37.8	37.0	32.64	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	39.1	39.1	39.0	39.0	39.0	39.0	32.80	-
6	39.5	39.5	39.6	39.2	39.2	39.2	.85	-
7	39.4	39.4	39.3	39.2	39.1	39.1	.86	-
8	39.1	39.2	39.2	39.1	39.0	39.0	.85	32.85
9	39.0	39.0	39.0	38.9	38.9	38.8	32.86	-
10	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-
12	38.8	38.7	38.7	38.6	38.5	38.3	32.82	-
13	-	-	-	-	-	-	-	-
14	37.8	37.5	37.7	37.7	37.7	37.8	32.69	-
15	-	-	-	-	-	-	-	-
16	38.1	38.1	38.0	37.7	37.7	37.7	32.74	-
17	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-
19	38.9	38.9	38.9	38.8	38.8	38.7	32.64	-
20	38.8	38.7	38.7	38.7	38.6	38.5	.66	-
21	38.3	38.4	38.2	38.0	38.0	38.0	38.54	-
22	37.8	37.8	37.8	37.8	37.9	37.9	32.52	-
23	-	-	-	-	-	-	-	-
24	38.0	37.5	37.5	37.5	37.5	37.3	32.45	-
25	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-
Mean								

Month and day	Temperature at depth of--						Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
February								
1	-	-	-	-	-	-	32.78	
2	48.2	48.2	48.2	48.7	49.0	49.0	32.78	
3	-	-	-	-	-	-	-	
4	49.3	-	-	-	-	-	32.83	
5	-	-	-	-	-	-	-	
6	-	-	-	-	-	-	-	
7	-	-	-	-	-	-	-	
8	-	-	-	-	-	-	-	
9	41.8	42.3	42.5	-	-	-	32.33	
10	-	-	-	-	-	-	32.76	
11	-	-	-	-	-	-	-	
12	-	-	-	-	-	-	-	
13	-	-	-	-	-	-	-	
14	-	-	-	-	-	-	-	
15	-	-	-	-	-	-	-	
16	40.1	40.1	40.0	40.0	40.0	39.9	32.78	
17	40.1	40.0	40.0	40.0	40.0	40.0	.77	
18	39.9	39.9	39.9	-	-	-	32.77	
19	-	-	-	-	-	-	-	
20	-	-	-	-	-	-	-	
21	-	-	-	-	-	-	-	
22	38.8	39.0	39.0	39.0	38.9	38.9	32.56	
23	38.9	38.9	38.9	38.9	38.9	38.9	32.60	
24	38.9	38.9	38.9	38.9	38.9	38.9	33.02	
25	39.2	39.0	39.0	39.0	39.0	39.0	32.64	32.76
26	-	-	-	-	-	-	-	
27	-	-	-	-	-	-	-	
28	38.9	39.0	39.0	39.0	38.9	38.9	32.58	
29	-	-	-	-	-	-	-	
Mean								
April								
1	39.2	39.2	39.0	38.9	38.8	38.8	32.53	-
2	38.7	38.5	38.5	38.5	38.5	38.5	.57	-
3	38.9	38.9	38.8	39.0	38.9	39.0	32.50	-
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
7	39.7	39.6	39.6	39.4	39.5	39.5	32.47	-
8	40.0	39.3	39.3	39.3	39.4	39.5	.52	-
9	39.8	39.4	39.5	39.5	39.3	39.3	.48	
10	40.2	40.0	39.9	39.9	39.9	39.9	32.46	-
11	-	-	-	-	-	-	33.04	-
12	-	-	-	-	-	-	32.61	-
13	-	-	-	-	-	-	.56	-
14	41.0	40.9	40.7	40.1	40.2	40.0	32.56	-
15	-	-	-	-	-	-	-	-
16	40.0	40.2	40.0	40.0	40.0	40.0	32.44	-
17	40.2	40.2	40.4	40.1	40.0	40.0	.52	-
18	41.0	40.7	40.5	40.3	40.0	40.0	.43	-
19	41.4	41.4	40.9	40.7	40.6	40.5	.57	-
20	42.0	40.7	40.7	40.6	40.6	40.6	.39	-
21	42.3	41.5	41.5	41.0	41.0	41.0	.40	-
22	42.0	41.6	41.5	41.0	41.2	41.1	.43	-
23	41.5	40.9	40.7	40.7	40.6	40.7	.34	-
24	41.0	41.0	40.8	40.8	40.8	40.8	.35	-
25	42.0	41.2	41.0	41.0	41.0	41.0	.88	-
26	41.8	41.6	41.5	41.5	41.2	41.2	.44	-
27	43.7	42.5	41.6	41.6	41.2	41.2	.57	-
28	41.0	40.9	40.9	40.9	40.9	40.9	.48	-
29	42.0	41.8	41.7	41.7	41.6	41.5	32.43	-
30	41.7	41.0	41.0	41.0	41.0	41.0	32.43	-
Mean	40.9	40.6	40.4	40.3	40.3	40.3	32.52	

Table 7.--Nantucket Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[40°33' 00" N., 69°28' 00" W.; water depth: 192 feet]

Month and day	Temperature at depth of--						Salinity of depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
May								
1	42.7	41.2	41.2	41.0	41.0	-	32.38	-
2	42.0	41.5	41.5	41.4	41.2	-	.34	-
3	42.7	41.6	41.5	51.3	41.3	-	.32	-
4	43.1	41.1	41.1	41.2	41.2	41.0	.31	-
5	45.6	41.8	41.5	41.2	41.0	41.0	.30	32.32
6	-	41.5	41.5	41.6	41.5	41.5	.30	-
7	43.8	41.7	41.1	41.2	41.0	41.0	.31	-
8	45.0	41.8	41.4	41.3	-	-	.43	-
9	49.7	49.4	45.2	42.7	42.5	42.5	.54	-
10	48.0	44.5	42.7	42.7	42.7	42.7	.58	-
11	49.6	48.0	44.1	42.6	42.6	42.6	.64	-
12	46.3	43.7	40.5	39.4	39.5	39.5	.62	-
13	46.5	45.9	45.8	45.9	46.0	46.0	.30	-
14	46.0	45.8	46.0	46.0	46.1	46.1	.37	-
15	40.0	39.7	39.7	39.7	39.9	39.9	.28	-
16	40.8	40.1	39.6	39.8	39.8	39.8	.21	-
17	46.8	46.4	46.5	46.5	46.6	-	.20	-
18	-	-	-	-	-	-	.18	-
19	41.2	40.4	40.2	40.1	40.1	40.1	.16	-
20	41.7	41.0	40.2	40.2	40.6	40.6	.20	-
21	[illegible]	[illegible]	[illegible]	[illegible]	-	-	.18	-
22	-	-	-	-	-	-	.45	-
23	[illegible]	[illegible]	[illegible]	[illegible]	46.9	46.9	.34	-
24	-	-	-	-	-	-	.37	-
25	[illegible]	[illegible]	[illegible]	46.9	47.0	47.0	.27	-
26	-	-	-	-	-	-	.25	-
27	-	-	-	-	-	-	.24	-
28	-	-	-	-	-	-	.21	-
29	-	-	-	-	-	-	.24	-
30	-	-	-	-	-	-	.24	-
31	-	-	-	-	-	-	[illegible]	-
Mean	-	-	-	-	-	-	32.32	-
July								
1	56	-	-	-	-	-	31.86	-
2	50	-	-	-	-	-	.92	-
3	50	-	-	-	-	-	.85	-
4	52	-	-	-	-	-	.79	-
5	52	-	-	-	-	-	31.93	--
6	54.5	-	-	-	-	-	32.33	-
7	56	-	-	-	-	-	.01	-
8	-	-	-	-	-	-	.20	-
9	51.6	50.6	49.2	49.2	49.2	49.2	32.03	-
10	52.8	50.2	49.8	48.7	48.6	48.4	31.99	-
11	54.0	50.0	49.7	48.6	48.3	48.2	31.99	-
12	50.7	49.9	49.2	48.8	48.8	48.8	32.04	-
13	51.8	50.5	50.1	49.8	49.8	49.8	31.84	-
14	51.8	51.0	50.4	48.7	48.2	48.2	31.85	-
15	50.1	50.0	49.8	48.9	48.6	48.6	32.04	-
16	54.9	51.8	49.9	49.1	48.9	48.9	.35	-
17	55.9	53.1	50.6	49.3	48.6	48.3	.18	-
18	54.3	52.3	50.1	49.2	48.4	48.3	.19	32.43
19	59.9	52.4	49.2	48.7	48.2	48.1	.21	-
20	57.8	54.1	51.3	48.9	48.3	48.1	32.04	-
21	55.9	52.4	51.6	48.2	48.1	48.0	31.86	-
22	58.1	56.8	53.4	-	47.5	47.9	-	-
23	59.1	56.0	52.3	47.5	47.3	47.3	32.03	-
24	60.3	55.9	52.8	47.1	46.9	46.9	31.87	-
25	58.3	51.8	51.2	50.3	47.3	47.1	31.87	32.43
26	59.7	52.1	49.2	48.7	48.4	48.2	32.16	-
27	65.0	57.6	51.9	46.2	46.1	46.0	.16	-
28	65.8	57.7	54.4	52.1	51.8	51.8	.18	-
29	63.7	53.3	51.9	50.2	47.9	47.8	32.16	-
30	-	-	-	-	-	-	-	
31	-	53.9	52.7	50.1	48.7	47.7	32.00	
Mean	55.8	-	-	-	-	-	32.03	-

Month and day	Temperature at depth of--						Salinity of depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
June								
1	48							32.16
2	49							32.13
3	--							-
4	50							32.16
5	50							.21
6	49							.22
7	45							.06
8	49							.08
9	47							.11
10	50							.29
11	49							.32
12	50							.32
13	49							.16
14	47							32.03
15	50							31.99
16	47							31.90
17	50							32.08
18	52							32.04
19	49							31.87
20	51							.93
21	52							.94
22	30							.91
23	49							31.86
24	51.5							32.20
25	49.5							31.84
26	52							.87
27	52							.83
28	51							.79
29	52							.71
30	51							31.77
Mean	49.7							32.03
August								
1	56.0	51.7	51.5	50.2	49.0	48.8	31.95	32.25
2	53.1	51.9	51.8	51.0	49.3	49.2	.98	-
3	56.7	54.1	52.2	50.8	49.1	49.0	.96	-
4	58.3	54.7	52.4	50.2	49.9	49.8	31.81	-
5	51.9	51.1	51.0	50.8	50.3	50.2	32.03	-
6	59.4	41.0	50.2	49.9	48.9	48.7	.26	-
7	64.0	54.8	50.0	48.7	48.1	48.0	.30	-
8	63.9	62.2	53.8	49.0	48.8	48.8	.49	32.47
9	63.7	59.1	54.0	51.5	50.3	50.2	.59	-
10	65.0	58.0	53.6	52.0	52.0	52.0	.47	-
11	65.0	61.4	56.2	50.3	49.3	49.3	.53	-
12	65.5	63.0	58.5	51.0	49.9	-	.57	-
13	65.8	57.5	53.5	52.9	51.8	51.7	.56	-
14	66.6	58.9	54.0	50.1	49.8	49.7	.46	-
15	65.4	62.2	57.0	51.0	50.0	49.9	.51	32.70
16	66.0	58.3	54.0	49.8	49.2	49.2	32.40	-
17	65.0	64.2	53.9	51.2	50.5	50.5	-	-
18	65.0	63.7	52.7	51.7	51.2	50.9	32.21	-
19	65.3	64.3	58.7	55.2	50.1	49.9	.17	-
20	67.1	64.6	54.8	49.1	49.1	49.1	.30	-
21	67.1	64.3	54.0	49.1	49.2	49.2	.18	-
22	67.0	66.4	63.7	50.3	48.8	48.8	.11	32.80
23	67.2	66.3	57.0	50.0	49.2	49.2	.10	-
24	65.4	65.2	65.2	61.3	60.0	59.2	.03	-
25	66.5	65.9	59.7	52.5	50.1	50.0	.36	-
26	66.3	66.0	59.8	51.5	50.1	50.0	.35	-
27	67.0	64.7	58.4	52.2	50.9	50.7	.39	-
28	64.9	63.3	58.0	51.9	50.4	50.2	.21	-
29	62.0	56.2	56.1	53.8	51.6	51.5	.07	32.23
30	67.0	64.0	57.1	53.1	51.2	51.1	.38	-
31	67.0	58.0	55.0	52.1	51.5	51.5	32.27	-
Mean	63.7	60.2	55.4	51.4	50.3	50.2	32.27	32.49

Table 7.--Nantucket Lightship. temperature (° F.) and salinity (°/oo), 1960--Continued

[40°33' 00" N., 69°28' 00" W.; water depth: 192 feet]

Month and day	Temperature at depth of--						Salinity at depth of--		Month and day	Temperature at depth of--						Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.		0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
September									October								
1	67.1	57.7	55.8	54.7	53.3	53.2	32.29	-	1	61.1	61.1	61.1	59.0	55.9	54.1	-	
2	63.8	60.5	57.0	55.9	53.2	53.2	.28	-	2	58.6	58.3	58.2	57.7	57.2	57.2	33.24	-
3	61.0	56.0	54.4	54.0	53.3	53.2	.18	-	3	59.5	59.1	58.9	58.1	57.2	57.2	33.01	32.96
4	67.8	60.2	55.2	53.2	51.8	51.7	.45	-	4	-	-	-	-	-	-	-	-
5	60.2	55.3	54.9	53.2	52.2	52.2	.19	32.56	5	57.7	57.6	57.8	57.7	57.6	57.1	32.92	-
6	66.2	56.0	55.0	53.0	51.0	-	.29	-	6	62.6	62.4	61.3	60.8	60.2	60.1	33.30	-
7	58.3	54.3	53.9	53.8	53.2	53.2	.11	-	7	-	-	-	-	-	-	34.45	-
8	62.7	56.5	55.5	54.0	52.3	52.2	.22	-	8	57.6	58.1	58.9	58.2	-	60.9	32.48	-
9	61.0	56.5	55.3	54.3	53.3	-	.14	-	9	59.8	59.6	58.9	58.8	60.0		-	-
10	62.0	57.8	57.2	54.3	52.8	52.7	.14	-	10	58.6	57.8	57.7	59.2	60.1	60.2	32.54	33.06
11	63.3	57.0	55.8	55.2	53.7	52.5	.15	-	11	57.8	57.4	57.3	59.4	58.6	58.7	-	-
12	-	-	-	-	-	-	.22	32.37	12	57.6	57.4	57.3	57.7	59.3	59.2	32.54	-
13	57.7	56.7	56.2	55.7	53.1	52.2	.23	-	13	58.1	58.8	58.3	57.1	59.2	59.1	32.38	-
14	61.5	56.7	55.8	55.5	51.7	51.0	.21	-	14	57.9	57.2	57.4	58.3	57.8	57.8	33.09	-
15	-	58.7	57.3	55.5	52.3	52.0	.14	-	15	57.8	57.6	56.2	57.8	58.0	57.2	32.47	-
16	61.8	56.8	56.1	55.9	51.9	51.1	.18	-	16	58.6	58.8	58.4	57.2	57.4	57.9	-	-
17	-	56.0	55.9	54.0	52.1	52.0	.07	-	17	57.2	57.1	56.4	56.9	58.2	58.1	32.46	-
18	67.0	67.0	66.2	64.2	57.5	55.0	.64	-	18	58.1	57.9	58.1	58.9	58.0	58.1	-	-
19	60.0	56.3	55.8	54.0	51.5	51.5	.10	32.24	19	58.1	57.8	57.1	57.1	57.7	57.8	32.46	-
20	63.0	60.0	56.0	52.8	52.2	51.9	.76	-	20	58.7	58.4	58.1	57.1	56.8	56.8	-	-
21	60.0	60.0	57.0	52.7	52.2	52.2	.53	-	21	58.8	58.3	58.4	58.5	58.1	57.1	-	-
22	60.7	60.3	60.2	54.0	53.9	53.9	.75	-	22	58.7	58.2	58.2	58.8	58.8	58.8	32.72	-
23	64.2	64.0	63.9	59.1	59.1	58.9	32.40	-	23	58.9	58.9	58.2	58.3	58.9	56.9	-	-
24	-	-	-	-	-	-	-	-	24	58.6	58.4	58.0	58.2	58.5	58.6	32.54	-
25	59.1	59.0	58.9	58.7	54.2	54.2	32.40	-	25	58.1	58.2	58.2	58.7	58.8	58.8	33.20	-
26	61.8	61.8	61.8	57.2	57.2	57.2	.72	-	26	57.8	58.2	58.8	58.7	58.5	58.4	32.90	-
27	60.5	60.3	60.2	58.8	55.3	55.2	.77	-	27	58.2	58.	58.7	58.2	58.2	58.2	-	-
28	60.2	59.8	59.8	59.2	55.3	55.2	.60	-	28	55.1	55.1	55.1	55.2	55.3	55.4	-	-
29	60.3	60.0	59.7	56.8	56.2	-	.64	-	29	54.8	54.9	55.1	55.2	55.6	-	-	-
30	61.0	60.7	60.4	57.2	56.2	56.1	32.64	-	30	54.5	54.5	54.4	54.0	54.2	54.3	-	-
									31	53.8	53.9	53.9	53.8	53.3	53.9	32.35	32.49
Mean	62.0	58.3	57.5	55.6	53.6	53.3	32.36	-	Mean	57.5	57.1	57.1	57.2	57.4	57.4	32.87	-
November									December								
1	53.2	53.4	53.2	53.0	53.0	53.0	32.31	-	1	49.8	49.2	49.2	49.9	50.5	50.7	33.53	-
2	53.0	52.9	52.8	52.8	52.7	52.7	.31	-	2	50.1	50.1	50.1	51.2	52.5	52.6	33.46	-
3	52.8	52.7	52.5	52.5	51.3	51.2	.41	-	3	50.5	50.5	50.6	52.0	52.2	-	.72	-
4	52.3	52.2	52.2	-	-	-	.39	-	4	50.2	50.7	50.8	50.9	50.9	50.9	32.98	-
5	52.5	52.4	52.4	52.3	51.2	51.2	.40	-	5	49.6	49.6	49.0	49.7	50.3	50.3	33.30	-
6	52.8	52.8	52.7	52.7	51.3	51.3	.44	-	6	50.1	50.1	50.2	50.8	51.4	51.4	-	-
7	52.2	52.2	52.2	52.2	51.8	51.7	.42	-	7	48.8	48.8	49.0	51.1	51.6	51.8	32.97	-
8	53.1	52.9	52.9	52.9	52.9	52.8	.49	-	8	49.2	49.3	49.2	50.1	52.1	52.1	.53	-
9	53.1	52.8	52.8	52.8	52.8	52.8	.46	-	9	47.8	47.9	48.2	48.3	49.4	50.1	32.64	-
10	53.0	52.8	52.8	52.7	52.6	52.6	.46	-	10	-	-	-	-	-	-	-	-
11	52.3	52.0	52.0	52.0	52.0	52.1	.39	-	11	-	-	-	-	-	-	32.60	-
12	52.2	52.2	52.1	52.1	52.1	-	.45	-	12	-	-	-	-	-	-	-	-
13	52.8	52.1	52.1	52.1	52.1	-	.42	-	13	45.3	45.8	45.3	45.7	45.8	45.3	32.55	-
14	52.2	52.2	52.2	52.2	52.2	52.0	.41	32.47	14	-	-	-	-	-	-	-	-
15	52.0	51.0	51.3	51.8	51.9	-	.19	-	15	45.2	45.2	45.2	45.2	45.2	45.2	32.66	-
16	51.9	51.5	51.4	51.0	50.9	50.9	.43	-	16	45.7	45.7	45.2	45.7	45.8	45.9	.74	-
17	53.0	53.0	53.0	53.0	53.0	53.0	.40	-	17	45.1	44.9	44.9	45.1	45.1	45.1	.62	-
18	52.0	51.9	51.9	52.2	52.5	52.5	.35	-	18	44.7	44.8	44.7	44.7	44.8	44.8	.59	-
19	52.0	52.0	52.0	52.0	52.1	52.1	.52	-	19	45.8	44.1	44.1	44.8	45.1	45.2	.58	-
20	51.6	51.4	51.3	51.2	51.8	52.0	.44	-	20	44.9	44.7	44.2	44.8	44.8	44.9	.61	-
21	51.8	51.8	51.9	52.0	52.1	52.1	.51	-	21	44.9	44.8	44.8	44.7	44.7	44.7	.62	-
22	51.2	51.2	51.2	51.8	51.8	51.9	.50	-	22	-	-	-	-	-	-	.58	-
23	51.0	51.4	51.7	52.0	-	-	.57	-	23	44.1	44.2	44.5	44.8	44.[illegible]	44.8	32.57	-
24	50.5	50.5	50.8	51.1	51.7	51.7	.47	-	24	-	-	-	-	-	-	-	-
25	50.2	49.9	49.9	50.0	51.2	-	.32	-	25	44.0	44.0	44.1	44.[illegible]	44.0	44.[illegible]	32.61	-
26	49.5	49.1	49.1	50.7	51.2	51.2	.30	-	26	43.9	43.9	43.9	43.8	43.9	-	.61	-
27	-	-	-	-	-	-	.61	-	27	43.8	43.8	43.8	43.8	43.8	43.8	32.53	-
28	-	50.8	50.8	51.0	51.2	-	.4	32.32	28	43.1	43.[illegible]	43.[illegible]	43.[illegible]	43.[illegible]	43.[illegible]	-	-
29	49.5	49.5	49.5	49.7	49.8	-	.38	-	29	-	44.5	44.4	44.[illegible]	44.2	44.2	-	-
30	50.2	49.7	50.2	50.3	50.5	50.6	32.[illegible]	-	30	-	-	-	-	-	-	32.52	-
									31	44.5	44.3	44.3	44.3	44.3	44.3	32.57	-
Mean	51.9	51.7	51.8	51.9	51.8	52.0	32.43	-	Mean	46.5	46.4	46.4	46.8	47.1	47.[illegible]	32.[illegible]	-

Woods Hole, Massachusetts (fig. 8, table 8)--The monthly mean water temperature for March was the coldest since 1941, and values continued below the mean through April. The relatively warm conditions of November gave way abruptly to below normal readings in late December.

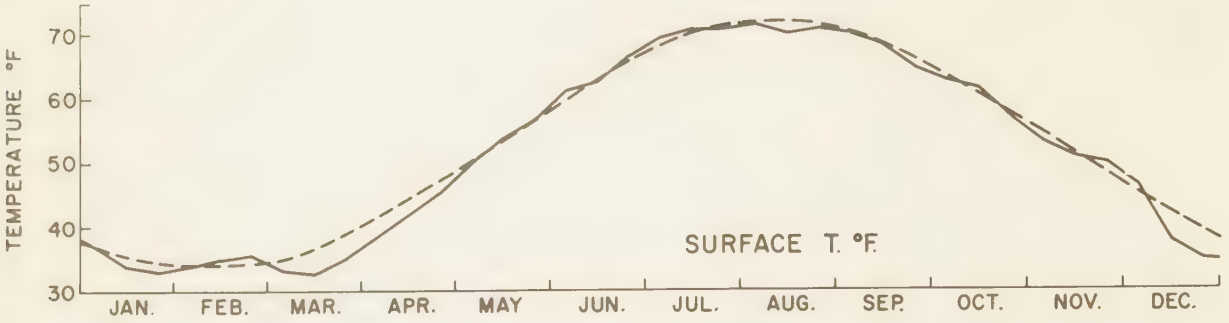

Figure 8.—Woods Hole, Massachusetts. (Dashed line mean for period 1950-59.)

Table 8.--Woods Hole, Massachusetts: surface temperature (° F) 1960

[41°31' N., 70° 40' W.]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	37.3	33.4	34.6	37.3	46.7	59.4	68.5	71.0	70.7	63.7	54.5	47.9
2	37.4	33.8	34.0	37.6	46.5	60.7	67.9	71.2	70.8	63.1	55.1	46.8
3	38.0	33.2	33.7	37.4	47.8	60.9	68.3	72.9	69.3	63.1	54.9	46.5
4	37.8	33.2	31.5	39.0	48.9	60.9	68.9	70.9	69.0	62.8	54.0	46.4
5	37.2	33.5	32.3	38.9	51.0	60.7	69.2	70.2	69.0	62.4	53.5	46.2
6	37.1	34.1	32.9	39.0	52.0	61.2	69.8	71.1	69.0	62.3	53.2	46.1
7	37.0	34.7	33.6	38.2	50.9	62.1	69.2	71.1	68.8	61.7	52.2	46.1
8	37.3	34.1	33.3	39.3	50.9	62.2	70.2	70.2	68.9	61.2	50.9	45.2
9	36.4	34.1	32.8	39.1	50.2	61.7	69.1	70.9	69.5	61.1	50.4	44.2
10	35.9	34.5	32.9	39.6	51.9	60.9	69.6	69.9	69.8	61.2	50.7	43.1
11	35.1	35.2	31.9	40.0	51.7	60.7	70.2	69.1	69.0	61.1	50.5	42.3
12	33.9	35.6	31.9	40.8	52.2	60.8	70.3	69.0	68.2	60.8	50.4	40.3
13	33.9	34.8	32.0	40.8	52.3	61.5	70.5	69.9	67.8	60.8	50.2	37.2
14	34.0	34.9	32.8	41.1	52.8	62.1	69.8	70.3	66.2	61.2	50.2	36.7
15	33.9	34.3	32.8	41.9	52.9	61.2	69.0	70.1	67.8	61.0	50.2	36.5
16	34.0	34.2	32.9	41.9	53.8	62.8	70.2	69.8	66.8	61.0	50.9	36.8
17	33.4	34.3	32.9	41.9	54.2	62.9	71.3	69.7	66.8	61.0	51.0	36.2
18	33.2	34.9	33.4	42.8	54.5	63.1	71.0	69.2	67.0	61.2	50.9	36.1
19	33.7	35.9	33.8	43.0	55.2	64.1	70.5	69.0	67.1	60.8	50.8	36.1
20	33.1	35.8	34.1	44.0	56.8	63.8	71.5	69.9	66.2	60.7	50.2	35.9
21	33.1	35.4	34.9	45.2	57.2	65.2	71.7	69.8	65.6	59.1	50.0	35.9
22	33.0	35.6	34.1	45.9	55.2	66.1	71.2	70.0	65.0	58.7	50.0	35.3
23	33.0	-	34.9	44.2	54.9	65.6	71.1	70.7	64.9	58.7	50.0	35.1
24	32.8	35.8	35.2	43.9	55.0	65.3	71.1	70.7	64.8	58.3	49.6	34.4
25	33.0	35.2	34.9	45.1	55.8	65.2	70.2	70.0	64.3	56.3	49.2	34.5
26	33.1	35.7	34.3	45.2	56.1	66.0	70.2	69.9	63.5	55.8	49.2	34.9
27	32.9	36.2	35.0	45.1	56.3	66.9	69.9	70.0	63.5	55.8	49.2	35.2
28	33.0	35.6	35.0	45.1	56.8	67.4	69.8	70.1	63.5	55.8	49.2	34.2
29	33.4	34.9	35.8	45.7	57.1	67.9	69.8	70.8	63.3	55.4	49.2	34.1
30	33.5		36.1	46.1	58.2	68.5	68.7	70.8	63.4	54.2	49.2	34.2
31	33.4		37.1		59.0		68.3	70.3		54.2		34.1
Mean	34.6	34.7	33.8	41.8	53.4	63.3	69.9	70.3	67.0	59.8	51.0	39.2

Buzzards Lightship (fig. 9, table 9)--January and February surface temperatures were above those of the three previous years, but March and April warming lagged. The slight depression in mid-August also appeared at Woods Hole. December data were lost in transit. Salinity during July and August was slightly lower than those for 1956-59, but there is little annual or year-to-year variation at this station.

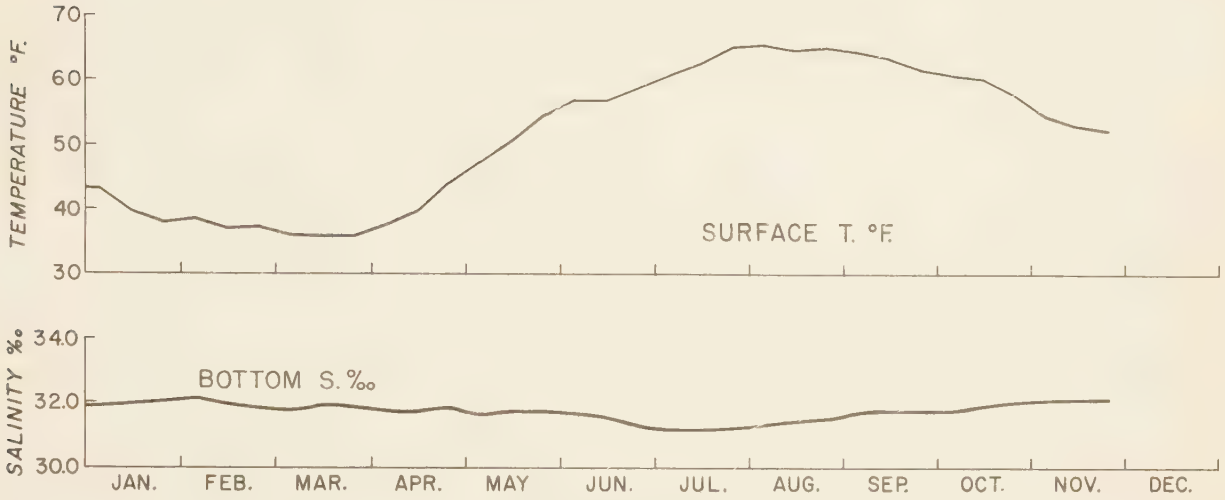

Figure 9.--Buzzards Lightship.

Table 9.--Buzzards Lightship: temperature (° F.) and salinity (°/oo), 1960

[41°24' 00" N., 71°03' 00" W.; water depth: 74 feet]

Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity
January			February			March			April		
1	43	32.00	1	40	32.20	1	36	31.78	1	37	31.91
2	44	32.06	2	41	.27	2	37	.80	2	37	.90
3	43	31.73	3	39	.14	3	38	.93	3	37	.98
4	43	.94	4	37	.05	4	35	.72	4	37	.81
5	42	.94	5	37	.54	5	35	.74	5	38	.81
6	45	.93	6	38	.08	6	34	.73	6	38	.64
7	43	.86	77	39	32.08	7	35	.72	7	38	.53
8	44	.86	8	39	31.91	8	37	.77	8	38	.59
9	43	.83	9	39	32.06	9	37	.88	9	38	.69
10	42	.82	10	37	31.90	10	37	.84	10	38	.71
11	40	.91	11	36	32.10	11	36	.83	11	38	.82
12	40	.88	12	38	32.08	12	37	.89	12	39	.58
13	40	.81	13	34	31.96	13	35	.87	13	39	.78
14	38	.87	14	38	31.93	14	35	31.96	14	40	.88
15	38	31.93	15	38	32.02	15	35	32.07	15	40	.90
16	41	32.03	16	38	32.00	16	35	31.99	16	40	.85
17	41	31.92	17	37	31.86	17	36	.93	17	38	.88
18	41	32.02	18	36	.99	18	37	.98	18	41	.52
19	39	31.87	19	38	.96	19	37	.93	19	41	.53
20	40	32.02	20	38	.84	20	37	.66	20	42	.54
21	37	31.85	21	37	.84	21	37	.87	21	44	.70
22	37	.86	22	37	.66	22	36	.74	22	44	.61
23	37	.80	23	37	.75	23	35	.84	23	43	.99
24	36	.92	24	37	.77	24	35	.74	24	45	.92
25	37	31.92	25	38	31.90	25	36	.92	25	44	.98
26	39	32.17	26	38	32.04	26	36	.75	26	44	.96
27	38	31.93	27	38	32.08	27	36	.91	27	44	.88
28	42	32.20	28	38	31.76	28	36	.75	28	44	.90
29	39	.14	29	37	31.79	29	36	31.96	29	45	.86
30	39	.19	30	-	-	30	-	32.03	30	45	31.82
31	39	32.34				31	-	31.95			
Mean	40.3	31.95	Mean	37.7	31.98	Mean	36.0	31.85	Mean	40.5	31.78

Table 9.--Buzzards Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[41°24' 00" N., 71°03' 00" W.; water depths 74 feet]

Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity	Month and day	Temperature	Salinity
May			June			July			August		
1	45	31.77	1	57	32.05	1	60	31.26	1	67	31.23
2	46	.58	2	56	31.47	2	60	.20	2	66	.21
3	48	.28	3	56	.70	3	62	.10	3	68	.20
4	48	.54	4	58	.50	4	63	.18	4	64	.35
5	48	.65	5	58	.63	5	63	.15	5	64	.40
6	48	.63	6	58	.57	6	61	.23	6	66	.43
7	49	.56	7	57	.67	7	61	.22	7	67	31.45
8	49	.80	8	57	.73	8	60	.26	8	-	-
9	48	.82	9	57	.68	9	60	.22	9	66	31.41
10	48	.88	10	58	.70	10	61	.24	10	65	.31
11	49	.87	11	57	.71	11	60	.33	11	64	.38
12	50	.86	12	56	.70	12	61	.28	12	65	.35
13	50	.87	13	56	.68	13	61	.26	13	67	.31
14	50	.86	14	58	.62	14	63	.21	14	66	.30
15	51	.86	15	56	.72	15	63	.19	15	67	.30
16	51	.58	16	57	.66	16	61	.19	16	65	.39
17	52	.62	17	58	.66	17	65	.20	17	63	.54
18	53	.64	18	57	.54	18	65	.18	18	64	.46
19	51	.91	19	58	.43	19	64	.20	19	65	.47
20	52	.86	20	58	.33	20	67	.16	20	65	.46
21	54	.70	21	58	.45	21	65	.20	21	64	.41
22	54	.90	22	59	.36	22	65	.21	22	67	.41
23	52	.85	23	60	.34	23	66	.20	23	67	.47
24	52	.77	24	58	.27	24	66	.23	24	64	.56
25	53	31.72	25	59	.28	25	64	.28	25	64	.56
26	54	-	26	60	.34	26	67	.25	26	64	.57
27	55	31.73	27	58	.29	27	64	.30	27	67	.50
28	56	.89	28	60	.28	28	67	.19	28	65	.56
29	57	.71	29	59	.29	29	66	.26	29	66	.57
30	58	.58	30	60	31.28	30	64	.21	30	66	31.54
31	57	31.78	31	-	-	31	66	31.27	31	66	-
Mean	51.2	31.74	Mean	57.8	31.53	Mean	63.3	31.22	Mean	65.5	31.42
September			October			November			December		
1	65	31.63	1	62	31.70	1	57	32.09	1	-	-
2	67	.55	2	62	.66	2	57	.04	2	-	-
3	65	.64	3	62	.82	3	57	.13	3	-	-
4	65	.63	4	62	.75	4	56	.02	4	-	-
5	63	.64	5	62	.86	5	56	32.02	5	-	-
6	63	.70	6	61	.82	6	55	31.93	6	-	-
7	63	.94	7	61	.69	7	55	32.26	7	-	-
8	65	.85	8	61	.69	8	54	31.97	8	-	-
9	66	.89	9	61	.71	9	53	32.25	9	-	-
10	66	.86	10	61	.78	10	50	31.98	10	-	-
11	65	31.82	11	62	.86	11	52	32.15	11	-	-
12	-	-	12	61	.86	12	56	.12	12	-	-
13	65	31.81	13	61	.80	13	53	.07	13	-	-
14	64	.81	14	61	.88	14	54	.50	14	-	-
15	64	.67	15	61	.79	15	54	.01	15	-	-
16	64	.71	16	61	.88	16	53	.02	16	-	-
17	64	.82	17	60	31.94	17	54	.08	17	-	-
18	63	.85	18	61	32.05	18	53	.17	18	-	-
19	63	.84	19	60	31.96	19	53	.01	19	-	-
20	63	.79	20	61	32.10	20	53	.11	20	-	-
21	62	.79	21	60	.01	21	53	32.01	21	-	-
22	62	.80	22	60	32.04	22	52	32.04	22	-	-
23	62	.81	23	60	31.99	23	54	32.19	23	-	-
24	62	.80	24	60	32.14	24	53	.16	24	-	-
25	62	.74	25	58	.00	25	55	.25	25	-	-
26	62	.85	26	58	.01	26	52	.13	26	-	-
27	62	.68	27	58	.05	27	53	32.02	27	-	-
28	62	.81	28	57	.05	28	51	31.88	28	-	-
29	62	.80	29	57	.05	29	53	32.28	29	-	-
30	62	31.62	30	57	.06	30	51	32.28	30	-	-
31	-	-	31	57	-				31	-	-
Mean	63.6	31.76	Mean	60.2	31.91	Mean	53.7	32.10	Mean	-	-

Kingston, Rhode Island (fig. 10, table 10)--As at Buzzards Lightship, January and February temperatures at Kingston were relatively warm, though the subsequent vernal warming lagged somewhat. The rest of the year was average until late November, which was warmer than usual. The sharp drop in December was seen at other stations.

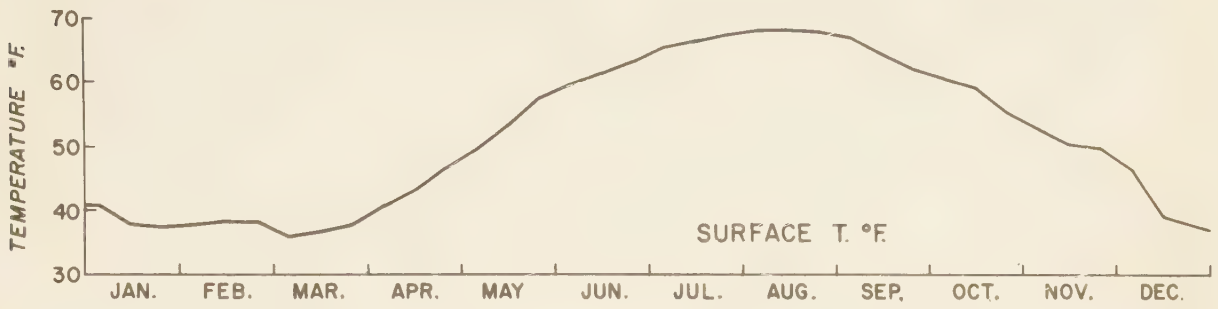

Figure 10.—Kingston, Rhode Island.

Table 10.--Kingston, Rhode Island Narragansett Marine Laboratory Pier: surface water temperature (° F.), 1960

[41°29' 32" N., 70°25' 10" W.]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	41.0	37.6	37.6	39.9	47.8	57.4	64.6	68.0	68.4	-	53.6	49.8
2	41.0	37.6	37.2	41.0	48.0	59.0	66.9	67.6	68.5	-	54.5	48.6
3	42.4	37.6	36.7	41.7	48.4	58.6	64.8	68.2	68.0	61.7	53.8	-
4	41.9	37.9	35.6	41.4	48.7	58.8	65.7	68.9	67.6	61.0	54.9	-
5	41.4	37.9	34.9	41.2	49.3	59.2	65.5	68.4	67.6	61.0	-	46.4
6	41.0	38.1	34.5	41.0	49.6	59.9	65.8	68.5	67.1	60.8	-	46.0
7	41.0	38.3	35.4	41.4	50.9	61.7	66.0	69.1	66.4	60.3	53.8	46.2
8	40.6	38.1	35.8	40.8	51.4	61.5	66.0	68.7	66.2	-	52.9	45.5
9	40.1	38.1	36.0	40.3	51.8	61.3	65.7	68.7	66.0	-	50.9	44.4
10	38.3	38.1	36.1	40.6	51.4	61.5	65.8	67.8	-	59.9	50.0	-
11	38.5	39.2	36.3	41.0	50.7	61.3	66.0	68.0	-	59.9	-	-
12	38.1	39.4	36.0	40.5	51.8	60.8	66.2	67.6	65.7	-	-	40.8
13	37.6	38.3	36.3	41.4	52.0	61.7	65.8	67.8	65.5	59.9	-	38.8
14	37.4	38.1	36.5	41.9	52.5	61.2	66.0	68.0	65.1	59.4	48.6	37.4
15	37.4	38.1	36.3	43.0	52.9	61.0	67.1	68.4	64.6	-	49.6	37.8
16	37.8	37.8	37.0	44.1	53.2	61.7	66.9	68.7	64.4	-	50.9	38.3
17	38.5	37.9	37.4	45.9	54.5	61.3	66.9	69.4	-	59.9	51.8	-
18	38.3	38.3	37.2	44.4	54.3	61.5	66.7	69.6	-	59.9	52.0	-
19	37.6	38.7	37.4	44.3	55.8	63.5	66.6	69.4	64.0	59.4	-	41.0
20	37.9	38.7	37.8	45.3	57.2	63.3	67.6	68.5	63.5	59.0	-	40.1
21	37.6	38.1	37.8	44.8	57.9	63.3	68.4	68.9	63.5	58.5	51.1	40.1
22	37.4	37.9	37.2	45.5	57.7	63.1	67.5	69.1	63.0	-	50.5	40.3
23	36.9	37.9	37.0	46.0	56.7	63.0	66.7	69.3	62.6	-	50.2	39.6
24	37.0	37.9	38.1	46.0	57.2	63.1	68.0	69.4	-	57.2	-	-
25	37.4	38.1	37.9	45.7	56.3	62.2	68.4	68.7	-	56.3	50.0	-
26	37.6	38.8	37.2	46.4	57.7	63.0	68.2	67.8	62.2	55.6	-	-
27	37.9	39.0	37.9	46.6	58.6	64.0	67.1	67.1	62.1	54.7	-	37.4
28	37.2	38.8	38.1	47.7	58.6	64.2	67.5	68.0	62.1	53.8	49.6	36.5
29	37.6	38.3	38.5	49.5	58.5	64.2	68.0	67.5	61.9	-	49.1	36.0
30	37.9		38.8	49.6	58.5	64.2	67.6	67.6	61.7	-	49.8	35.6
31	37.9		39.4		57.7		67.6	68.0		53.2		-
Mean	38.7	38.2	37.0	43.6	53.8	61.7	66.7	68.4	64.9	58.6	51.4	41.3

Ambrose Lightship (fig. 11, table 11)--The presence of a slight and somewhat confused vertical temperature structure from January through March was also seen at this station during 1957-59, though not in 1956. During this season other stations show nearly isothermal conditions. The difference at Ambrose Lightship no doubt reflects variations in the amount of runoff from the Hudson River; such variations are clearly shown in the surface salinity values. The June data were lost when the Relief Lightship was rammed and sunk, and bathythermograph failure resulted in the loss of bottom observations during late summer and fall.

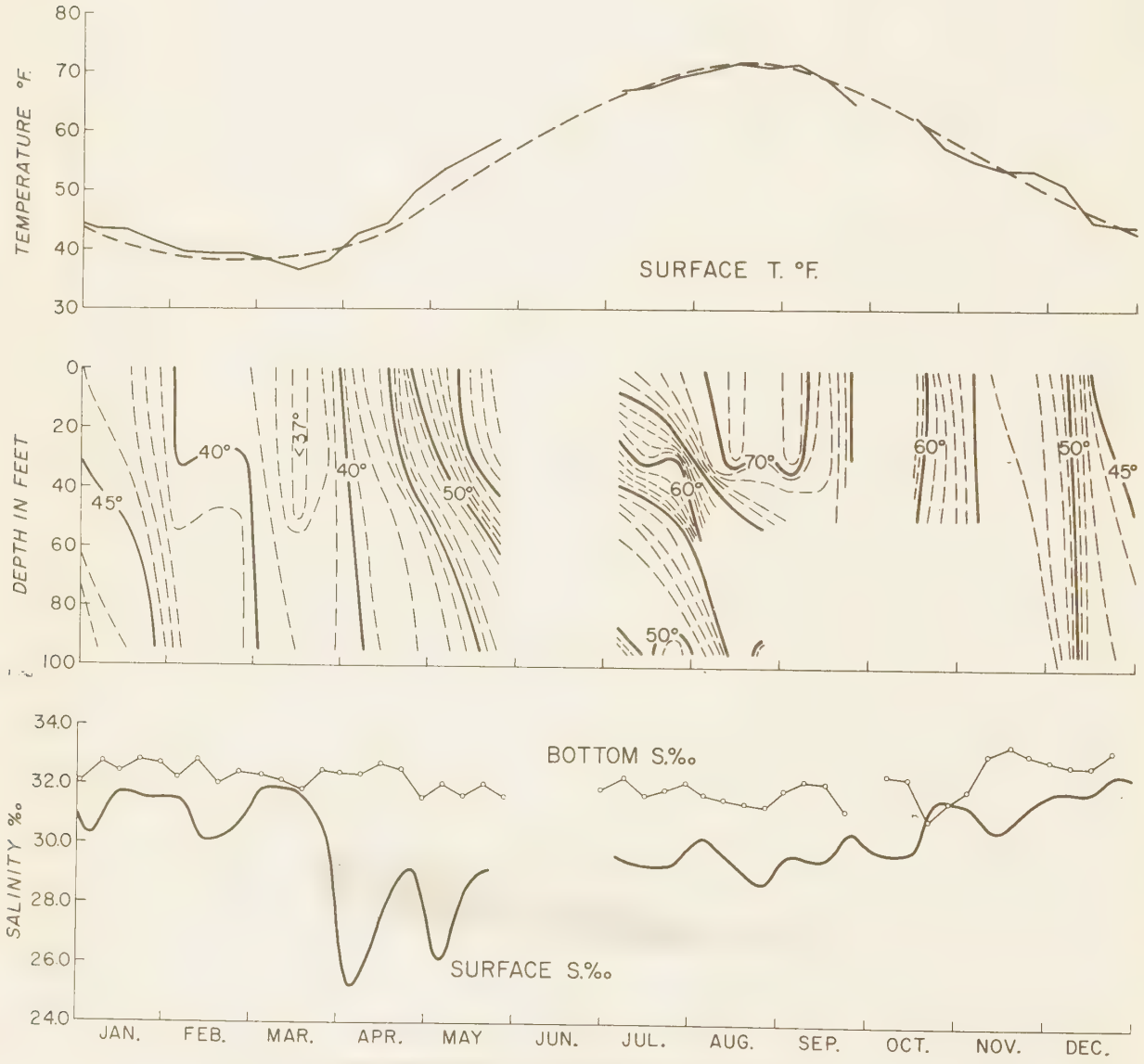

Figure 11.--Ambrose Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 11.--Ambrose Lightship: temperature (° F.) and salinity (°/oo), 1960

[40°27.1' N., 73°49.4' W.; water depth: 95 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.		0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
January							February						
1	43.8	43.8	44.0	-	31.82	32.10	1	40.8	40.9	40.9	-	32.06	-
2	44.0	43.8	44.7	-	31.10	-	2	41.0	40.9	41.0	42.9	.26	-
3	44.0	44.2	44.0	-	29.72	-	3	40.9	40.9	40.8	-	.28	-
4	43.8	44.4	45.0	44.9	29.44	-	4	39.1	39.1	39.1	39.0	.29	-
5	42.0	44.3	45.2	46.8	28.71	-	5	39.0	39.2	39.2	-	.18	32.23
6	43.0	45.1	46.3	48.0	30.27	-	6	40.0	39.9	39.9	-	.29	-
7	42.6	44.7	47.0	-	28.86	-	7	39.1	39.1	39.2	39.9	32.00	-
8	43.2	44.3	48.1	48.2	29.91	-	8	39.0	39.0	39.0	-	31.11	-
9	44.3	45.1	46.7	47.9	31.24	32.78	9	39.3	40.0	41.5	41.8	29.57	-
10	44.0	45.7	46.5	47.5	32.00	-	10	39.2	39.7	42.1	42.2	29.31	-
11	44.0	45.3	47.8	47.9	.16	-	11	40.5	40.5	42.0	42.0	31.05	-
12	46.3	46.5	46.5	46.5	.93	-	12	40.6	40.8	41.3	43.0	31.02	32.83
13	45.0	45.7	46.0	46.1	.70	-	13	39.2	40.1	41.2	-	30.19	-
14	44.1	44.1	44.2	45.8	32.45	-	14	40.5	40.5	40.5	41.0	31.42	-
15	43.4	43.9	43.9	-	31.54	32.45	15	38.7	39.3	40.1	40.5	29.13	-
16	43.4	44.1	44.3	45.9	32.45	-	16	38.1	40.3	41.8	42.1	30.97	-
17	41.9	42.4	44.9	-	30.16	-	17	37.9	38.9	41.9	-	28.39	-
18	41.2	43.2	43.8	-	30.79	-	18	37.9	39.4	43.1	-	26.94	-
19	42.0	42.3	44.8	-	31.64	-	19	41.4	41.4	41.4	-	32.07	32.04
20	42.2	42.4	44.0	-	30.96	-	20	39.7	40.9	41.0	42.9	29.57	-
21	41.5	41.7	42.0	-	31.45	-	21	39.8	40.9	41.6	43.0	30.44	-
22	41.5	42.1	42.2	-	.98	32.81	22	37.8	40.8	41.2	-	27.37	-
23	41.2	42.0	42.2	45.9	31.88	-	23	40.1	40.7	41.8	42.7	31.77	-
24	41.7	42.5	42.5	45.4	32.09	-	24	39.9	40.3	40.9	-	31.24	-
25	41.0	42.0	42.5	-	32.04	-	25	38.6	39.9	40.2	-	29.89	-
26	41.0	42.2	43.0	45.0	30.07	-	26	40.8	41.1	41.1	40.9	32.17	32.42
27	40.2	41.6	44.3	44.9	30.29	-	27	39.5	39.8	40.8	-	30.73	-
28	41.5	42.0	44.2	45.2	31.38	-	28	39.3	39.6	41.4	-	.46	-
29	41.7	42.2	44.2	45.2	31.37	32.71	29	38.9	39.9	41.1	41.8	30.55	-
30	41.8	42.0	43.9	44.6	32.14	-							
31	41.8	41.8	42.9	-	32.82	-							
Mean	42.7	43.5	44.6	46.2	31.24	32.57	Mean	39.5	40.1	40.9	41.7	30.71	32.38
March							April						
1	40.1	40.3	40.3	42.2	31.51	-	1	42.9	40.3	38.9	39.0	30.44	32.41
2	39.2	39.8	40.0	42.1	.11	-	2	42.5	42.3	39.4	39.1	31.45	-
3	39.1	39.4	40.0	42.2	31.88	-	3	42.1	42.0	41.2	39.2	30.12	-
4	39.2	39.5	39.8	39.8	32.37	32.37	4	42.1	40.5	40.0	39.6	22.67	-
5	39.0	39.8	39.8	-	.29	-	5	42.8	40.9	40.7	39.8	28.38	-
6	37.0	37.1	39.1	39.1	.27	-	6	42.3	41.4	40.1	40.1	19.16	-
7	37.3	37.5	37.8	39.2	32.05	-	7	43.0	40.9	40.3	-	21.12	-
8	37.0	38.0	38.6	-	31.45	-	8	43.3	39.7	40.0	40.0	18.70	32.39
9	37.8	37.8	37.8	39.2	32.12	-	9	43.1	41.2	40.2	40.2	22.46	-
10	37.4	37.5	37.5	-	.20	-	10	41.8	41.7	40.5	-	27.87	-
11	37.0	37.2	36.9	39.1	.18	32.19	11	43.0	41.0	40.6	40.6	26.91	-
12	37.3	37.3	37.3	38.6	.29	-	12	42.4	41.0	41.5	41.5	26.25	-
13	36.4	36.5	36.5	-	.04	-	13	42.5	41.8	41.8	-	29.38	-
14	36.9	37.0	37.0	-	.25	-	14	42.9	41.8	41.5	41.2	28.16	-
15	36.0	36.5	36.7	-	.04	-	15	44.2	41.9	41.8	-	.09	32.71
16	36.6	36.8	37.1	-	.50	-	16	46.2	41.4	41.3	41.2	28.19	-
17	36.8	36.9	36.9	-	32.17	-	17	46.0	45.2	41.4	-	30.30	-
18	36.2	36.5	36.6	36.9	31.92	31.89	18	46.5	45.1	41.3	41.0	27.43	-
19	36.8	36.8	36.9	37.0	31.94	-	19	44.5	44.9	41.9	41.3	27.48	-
20	36.9	36.7	36.7	-	29.55	-	20	46.0	45.1	41.8	41.5	22.79	-
21	-	-	-	-	30.51	-	21	47.7	42.2	41.6	41.5	24.05	-
22	36.9	37.0	37.8	38.2	30.46	-	22	47.9	41.9	41.0	41.0	29.54	32.56
23	36.8	36.6	37.4	39.0	31.11	-	23	47.2	43.8	41.0	41.0	30.39	-
24	37.5	37.4	37.3	39.0	30.12	-	24	48.2	46.8	42.2	42.0	.64	-
25	37.6	37.7	37.6	39.0	31.31	32.50	25	50.0	48.9	43.0	42.2	.22	-
26	37.6	38.1	38.4	39.1	31.76	-	26	51.2	49.0	43.2	42.2	30.12	-
27	37.5	37.7	37.9	38.6	30.40	-	27	51.8	49.3	43.8	42.2	29.58	-
28	39.4	37.5	38.3	39.0	.08	-	28	52.2	48.2	42.9	42.2	30.22	-
29	40.2	39.0	39.6	39.3	.25	-	29	52.7	51.0	44.2	42.3	30.11	31.59
30	39.0	37.4	37.9	38.0	30.73	-	30	53.0	52.6	46.2	42.5	26.96	-
31	40.9	40.3	38.8	38.9	-	-							
Mean	37.8	37.8	38.0	39.2	31.50	32.24	Mean	45.7	43.8	41.5	41.0	27.31	32.33

Table 11.--Ambrose Lightship: temperature (° F.) and salinity (°/oo), 1960.--Continued

[40°27.1' N., 73°49.4' W.; water depth: 95 feet]

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
May						
1	51.0	51.2	44.9	42.5	26.16	-
2	51.0	49.9	45.3	42.0	27.92	-
3	52.4	51.4	45.8	41.7	22.87	-
4	52.4	50.7	45.8	41.7	23.33	-
5	54.8	49.5	46.6	41.5	24.18	-
6	55.1	50.6	46.0	41.5	24.53	32.04
7	55.1	50.5	46.7	41.8	26.17	-
8	56.0	50.6	48.9	-	28.05	-
9	56.0	52.8	50.0	46.5	28.58	-
10	55.2	51.2	47.6	45.2	29.56	-
11	55.0	54.6	46.3	44.2	28.57	-
12	55.9	54.7	46.8	44.2	30.02	-
13	56.9	55.4	52.2	46.3	.40	31.68
14	56.0	55.4	49.8	47.2	30.13	-
15	54.7	54.3	49.2	46.0	29.98	-
16	55.3	54.9	47.0	42.7	29.03	-
17	56.9	54.6	47.3	42.6	27.82	-
18	58.1	57.0	53.5	42.5	26.67	-
19	57.6	55.6	46.8	43.0	26.33	-
20	57.7	54.3	48.9	43.4	27.62	32.09
21	57.5	54.5	46.4	43.9	26.98	-
22	59.6	59.1	48.7	-	29.57	-
23	58.6	57.7	56.7	49.0	29.60	-
24	57.7	57.1	56.6	48.6	30.57	
25	57.7	57.3	56.6	47.0	30.59	-
26	59.8	57.4	56.5	47.0	29.00	-
27	59.3	57.2	55.0	46.6	28.32	31.62
28	-	-	-	-	-	-
29	-	-	-	-	-	-
30	-	-	-	-	-	-
31	-	-	-	-	-	-
Mean						
July						
1	69.0	60.2	51.2	45.3	29.68	31.91
2	68.7	59.3	51.8	47.0	30.82	-
3	68.0	57.9	52.0	49.8	30.37	-
4	65.2	64.0	51.5	50.2	29.72	-
5	66.9	58.2	52.7	45.8	29.79	-
6	68.5	54.9	52.7	48.2	30.68	-
7	65.5	60.0	51.4	46.5	29.33	-
8	64.2	53.6	51.9	46.2	28.98	32.30
9	64.7	55.3	51.5	46.2	.86	-
10	66.2	56.1	51.8	45.7	28.19	-
11	63.9	56.3	51.3	46.0	29.35	-
12	65.0	54.3	52.6	46.1	28.93	-
13	67.5	54.5	52.5	46.9	29.66	-
14	65.7	57.7	52.1	48.0	28.91	-
15	66.4	57.9	55.0	52.0	29.93	31.70
16	67.0	60.0	54.3	54.2	.81	-
17	69.3	66.0	56.2	55.2	29.99	-
18	68.5	66.7	54.8	52.8	28.54	-
19	69.2	68.2	55.4	50.1	29.10	-
20	69.9	68.5	54.1	50.0	.64	-
21	71.0	64.0	54.8	-	.90	-
22	70.0	64.0	54.3	50.5	29.73	31.90
23	69.7	54.5	53.6	49.2	28.96	-
24	68.0	55.3	51.7	45.6	28.72	-
25	66.5	57.5	51.2	46.0	29.29	-
26	70.0	58.9	52.7	46.5	28.69	-
27	71.0	56.3	52.8	-	29.94	-
28	68.7	61.0	54.2	48.5	.60	-
29	68.5	56.2	54.7	-	29.22	32.18
30	-	-	-	-	-	-
31	67.1	66.3	64.9	53.8	30.60	-
Mean	67.7	59.5	53.4	48.6	29.50	32.00

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
June						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25	65.6	65.0	53.6	50.1		
26	64.3	64.9	49.8	-		
27	68.1	61.0	49.4	-		
28	66.6	64.5	49.5	45.1		
29	69.8	65.1	52.7	46.3		
30	67.5	66.7	53.2	47.5		
Mean						
August						
1	67.5	66.9	60.0	49.5	30.81	-
2	69.0	66.9	65.0	49.6	.65	-
3	70.1	67.2	62.2	49.8	.37	-
4	70.6	67.9	57.5	47.0	30.40	-
5	70.3	69.7	65.7	51.0	31.06	31.78
6	70.9	70.7	69.3	53.0	.25	-
7	71.4	71.0	69.6	54.0	31.18	-
8	70.2	70.6	68.7	52.9	29.44	-
9	72.2	70.2	64.1	51.1	30.07	-
10	70.3	69.2	66.1	52.3	28.42	-
11	71.2	71.0	67.6	53.7	29.19	-
12	71.0	70.7	69.2	-	29.35	31.61
13	71.0	71.8	68.3	56.0	-	-
14	71.4	72.0	68.6	55.0	27.89	-
15	72.1	71.5	67.5	54.3	28.14	-
16	72.0	71.6	67.5	54.3	29.72	-
17	71.6	71.4	68.9	55.2	29.70	-
18	70.9	70.9	70.9	57.5	30.41	-
19	69.9	69.9	69.9	56.5	.60	31.48
20	69.7	69.2	67.3	59.8	30.61	-
21	70.9	67.9	67.1	59.8	29.07	-
22	72.0	67.5	64.5	51.7	27.94	-
23	70.8	67.3	62.4	51.6	28.04	-
24	70.0	69.9	66.7	52.1	29.52	-
25	70.0	69.9	67.8	56.1	30.41	-
26	68.7	69.6	68.2	58.3	29.40	31.38
27	69.9	69.5	67.6	58.2	28.40	-
28	70.5	69.7	66.4	49.9	27.92	-
29	71.7	70.3	66.0	51.5	29.01	-
30	71.9	69.1	64.6	51.7	26.80	-
31	71.4	68.2	60.7	48.6	30.09	-
Mean	70.7	69.7	66.3	53.4	29.53	31.56

Table 11.--Ambrose Lightship: temperature (° F.) and salinity (°/oo), 1960.--Continued

[40°27.1' N., 73°49.4' W.; water depth: 95 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.		0 ft.	30 ft.	50 ft.	95 ft.	0 ft.	95 ft.
September							October						
1	73.1	71.1	67.2	52.3	29.75	-	1	-	-	-	-	30.79	-
2	72.2	71.9	67.2	54.0	29.38	31.91	2	-	-	-	-	.89	-
3	72.3	72.3	70.4	55.2	30.43	-	3	-	-	-	-	.22	--
4	70.0	71.8	68.9	57.4	29.22	-	4	-	-	-	-	30.85	-
5	70.3	71.7	70.7	54.5	28.93	-	5	-	-	-	-	29.35	-
6	71.0	70.8	66.9	48.8	30.57	-	6	--	-	-	-	.19	-
7	68.7	71.1	68.2	52.0	29.06	-	7	-	-	-	-	29.31	32.44
8	70.6	71.0	69.6	-	29.53	-	8	-	-	-	-	30.46	-
9	72.0	71.8	64.2	48.1	30.30	32.22	9	62.1	64.1	61.6	-	28.18	-
10	72.1	72.0	61.8	-	.77	-	10	63.4	63.2	63.3	51.2	29.29	-
11	72.1	71.8	62.9	-	.71	-	11	62.1	62.5	61.9	-	28.35	-
12	71.6	71.4	71.0	-	30.69	-	12	-	-	-	-	30.27	-
13	68.3	67.6	67.2	-	29.41	-	13	57.1	58.2	53.5	-	.09	-
14	67.2	68.1	68.4	-	29.52	-	14	63.8	63.9	59.6	-	30.63	32.32
15	68.2	69.0	67.7	-	27.30	-	15	63.5	63.0	60.5	-	29.66	-
16	68.8	69.0	68.7	42.8	26.53	32.12	16	-	-	-	-	28.50	-
17	68.3	68.3	68.5	51.1	30.31	-	17	64.2	64.0	61.0	-	30.50	-
18	67.4	67.4	67.3	-	.41	-	18	64.1	64.0	63.1	-	.56	-
19	67.6	67.6	67.6	-	.25	-	19	63.8	63.5	61.2	-	30.92	-
20	67.0	67.3	67.2	-	.30	-	20	61.9	62.3	62.9	-	29.01	-
21	66.0	65.8	66.0	-	.50	-	21	61.9	62.1	62.3	53.6	30.29	30.44
22	66.4	66.4	66.3	-	.76	-	22	56.1	62.1	62.1	-	32.58	-
23	66.3	66.1	66.0	-	30.58	31.24	23	58.9	61.7	61.4	-	-	-
24	65.2	65.4	65.0	-	29.73	-	24	60.2	60.3	61.5	-	30.95	-
25	62.6	62.6	63.0	-	31.19	-	25	57.5	57.5	57.0	-	31.84	-
26	62	-	-	-	.15	-	26	56.2	56.6	56.4	-	32.08	-
27	62	-	-	-	31.08	-	27	56.9	57.9	55.0	-	31.42	-
28	64	-	-	-	30.86	-	28	57.2	57.1	55.2	-	.81	31.56
29	65	-	-	-	30.31	-	29	54.7	54.9	54.9	-	.93	-
30	64	-	-	-	28.97	-	30	55.8	55.9	55.9	-	.65	-
							31	55.8	55.9	55.9	-	31.56	-
Mean	68.1				29.95	31.87	Mean					30.44	31.69
November							December						
1	54.8	54.3	54.1	-	31.65	-	1	54.9	54.9	54.9	54.9	32.94	-
2	55.7	55.7	55.6	-	31.68	-	2	53.1	53.1	53.9	55.0	32.64	32.97
3	55.1	55.5	55.7	-	30.80	-	3	51.0	51.4	52.4	-	31.93	-
4	54.8	55.0	56.7	-	31.06	31.94	4	51.1	51.1	51.9	54.9	32.21	-
5	55.2	55.5	55.7	-	.01	-	5	49.8	51.2	53.9	-	31.47	-
6	55.1	55.2	55.7	-	.54	-	6	49.5	51.5	52.0	-	30.40	-
7	55.0	55.0	55.0	-	31.82	-	7	51.0	51.0	52.0	54.6	31.11	-
8	56.5	56.7	56.5	-	32.42	-	8	51.4	51.1	51.3	53.0	32.19	-
9	53.5	54.5	55.2	-	31.12	-	9	51.0	50.9	51.0	52.0	.73	32.79
10	53.8	54.4	56.2	-	31.22	-	10	49.0	49.2	50.0	52.0	.02	-
11	54.3	54.5	54.9	-	32.04	33.11	11	49.7	49.7	50.0	-	32.42	-
12	52.7	54.5	55.4	-	30.92	-	12	-	-	-	-	-	-
13	51.0	54.9	55.8	-	29.10	-	13	48.0	48.4	48.3	48.3	32.88	-
14	52.5	54.1	55.4	57.0	29.64	-	14	46.5	46.5	46.4	-	32.59	-
15	52.0	54.1	55.4	-	28.04	-	15	43.5	45.4	45.6	47.3	31.28	-
16	53.0	55.0	56.4	-	29.46	-	16	44.0	47.3	48.2	48.1	30.93	32.75
17	54.2	54.2	55.6	-	31.00	-	17	44.5	45.0	46.4	46.8	31.74	-
18	53.9	54.4	54.5	-	.13	33.43	18	42.2	44.0	47.7	48.0	.09	-
19	54.6	54.0	54.0	-	31.86	-	19	41.8	44.0	46.0	-	31.64	-
20	54.3	54.3	54.6	57.5	32.17	-	20	43.9	45.1	45.5	47.7	32.39	-
21	-	-	-	-	31.84	-	21	47.0	46.7	46.7	46.8	.86	-
22	54.0	54.6	55.0	-	30.83	-	22	45.5	45.7	46.0	48.2	.47	-
23	53.5	53.7	56.2	-	30.57	-	23	38.3	41.5	46.0	46.1	.52	33.28
24	53.1	54.0	54.0	57.7	32.10	-	24	43.7	43.6	45.1	47.5	32.33	-
25	53.5	53.7	54.3	-	31.94	33.13	25	42.8	45.6	46.2	-	31.66	-
26	53.2	53.6	54.1	57.0	31.39	-	26	40.9	43.0	44.4	45.1	30.57	-
27	53.0	53.8	54.0	57.0	30.43	-	27	46.0	46.2	46.3	47.7	32.86	-
28	52.8	52.9	54.3	57.0	30.45	-	28	45.2	45.2	45.3	-	33.11	-
29	53.8	53.5	53.7	56.9	32.21	-	29	46.5	46.3	46.5	-	33.30	-
30	53.2	54.1	54.1	-	31.82	-	30	46.0	46.0	46.5	46.8	-	31.93
							31	43.3	44.2	46.8	-	33.29	-
Mean	53.9	54.5	55.1	-	31.11	32.90	Mean	46.7	47.6	48.4	49.5	32.12	32.74

Texas Tower #4 (off New York) (fig. 12, table 12)--With only 1959 for comparison, little can be said of the temperature regime at this station. The curve of 10-day mean values shows considerably more fluctuation than would be expected at an offshore station and undoubtedly reflects advective processes near the boundary of shelf and slope waters.

Between September 12 and 13 surface temperatures dropped by more than 6° F. as a result of the passage of hurricane Donna.

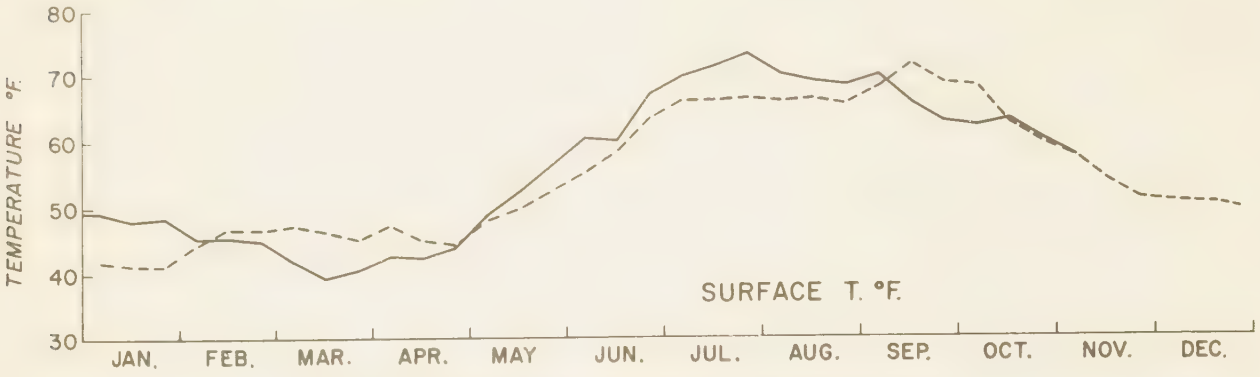

Figure 12.--Texas Tower #4 (off New York). (Dashed line mean for 1959.)

Table 12.--Texas Tower #4 (off New York:) surface water temperature (° F.) 1960

[39°48.4' N., 72°40.6' W.]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	48.6	47.7	43.7	42.9	46.1	58.2	69.4	69.8	69.4	61.1	58.8	-
2	50.8	47.5	43.4	43.8	46.4	59.4	68.8	69.8	69.1	61.2	57.9	-
3	51.5	46.4	43.5	43.6	47.4	60.4	69.0	69.8	68.6	62.6	57.3	-
4	49.6	44.0	43.9	44.0	48.8	60.9	69.0	69.2	68.0	61.8	56.6	-
5	49.5	44.3	43.0	43.3	49.9	61.1	69.1	69.8	68.9	62.4	56.9	-
6	49.0	45.1	41.2	42.4	50.4	62.0	69.0	69.7	69.6	62.6	56.6	-
7	48.7	44.6	39.8	41.4	50.6	62.5	68.6	69.2	70.1	61.5	56.5	-
8	48.8	44.0	39.8	40.4	49.4	60.2	69.4	70.0	70.2	61.1	55.9	-
9	47.7	44.1	39.2	40.8	48.9	59.0	70.6	70.4	70.6	61.4	56.9	-
10	47.0	44.2	39.2	41.2	48.6	57.7	72.0	70.4	70.6	62.3	57.8	-
11	46.8	44.7	38.3	41.3	49.6	57.3	71.5	70.8	70.4	62.5	55.9	-
12	46.6	45.5	38.8	41.0	51.4	56.6	71.7	70.4	71.0	61.8	55.7	-
13	46.2	45.0	39.1	41.2	51.4	57.3	72.2	70.3	64.3	61.6	55.8	-
14	46.3	45.7	39.3	41.7	51.5	59.0	72.1	70.1	65.4	62.6	55.7	-
15	47.6	45.7	39.5	42.0	51.3	59.2	69.1	71.2	63.9	63.4	56.4	-
16	49.0	45.8	39.5	42.8	52.4	60.9	68.4	70.6	64.0	63.6	-	-
17	48.9	45.8	39.5	42.7	52.9	62.0	68.9	67.4	63.4	63.8	-	-
18	48.8	46.0	39.5	42.7	53.0	61.7	70.5	65.5	63.8	63.4	-	-
19	48.8	44.4	39.4	42.3	53.8	61.4	72.4	65.2	63.7	62.6	-	-
20	48.8	44.2	39.6	43.0	54.1	62.8	72.3	65.8	64.4	62.8	-	-
21	48.4	45.4	39.4	43.2	54.4	64.0	71.9	66.6	63.7	61.4	-	-
22	48.1	45.3	39.0	43.2	54.6	65.0	71.7	66.8	63.2	61.0	-	-
23	48.2	44.4	39.2	43.8	54.7	65.6	72.2	67.7	62.4	60.9	-	-
24	48.2	43.8	40.2	43.0	55.1	66.1	72.4	67.5	62.4	60.1	-	-
25	48.2	44.4	39.0	43.6	55.9	65.6	72.7	67.1	61.8	58.8	-	-
26	48.2	45.6	38.8	43.6	57.2	65.2	73.7	68.4	60.4	59.8	-	-
27	48.2	45.3	39.8	43.6	57.8	68.4	72.9	69.0	63.0	59.6	-	-
28	48.3	45.1	41.1	43.4	56.7	68.9	73.8	69.0	62.4	59.0	-	-
29	48.1	44.3	41.0	43.9	56.1	69.2	73.9	69.0	62.5	59.2	-	-
30	48.2		42.2	45.2	56.6	69.7	73.2	68.5	63.5	59.1	-	-
31	48.1		43.6		57.6		73.0	68.5		58.6	-	-
Mean	48.4	45.1	40.4	42.7	52.4	62.2	71.1	68.8	65.8	61.4	-	-

Barnegat Lightship (fig. 13, table 13)--Except for below normal surface temperatures in March and again in December, 1960 was a warm year at stations between Barnegat and Cape Hatteras. Temperatures, surface and bottom, in January and February were above those of the 1956-59 period; in terms of 10-day means the bottom maximum of 68° F. in mid-September was the highest so far recorded for the Barnegat station. The highest daily reading was 69.9° F. on September 14 after the passage of hurricane Donna. This was the only position where that storm completely mixed the water column. Autumn chilling was normal until mid-December, when it was accelerated. The salinity minimum in late May was the lowest for the 5-year period 1956-60. Only a trace of the expected summer intrusion of cold water along the bottom is apparent in the isotherms.

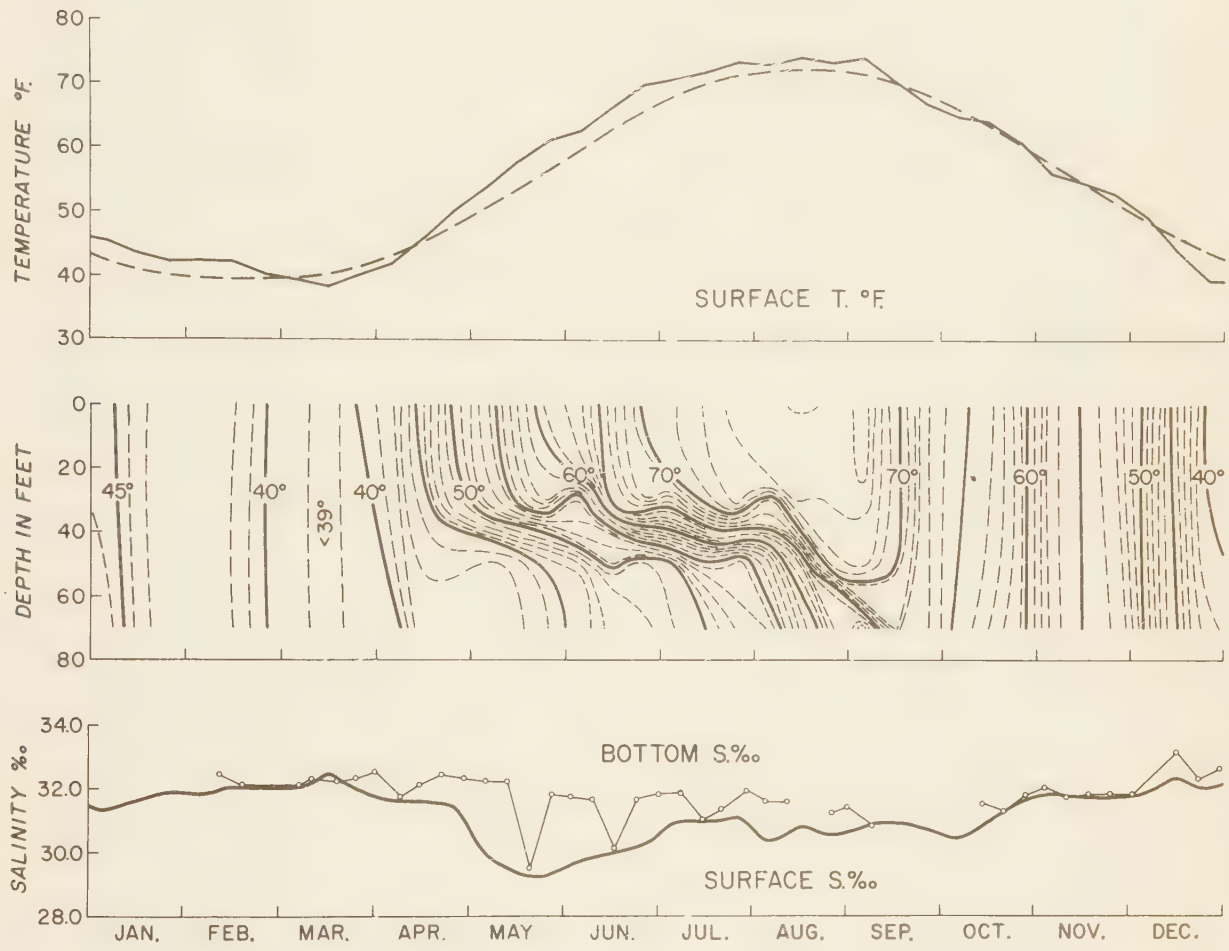

Figure 13.—Barnegat Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 13.--Barnegat Lightship: temperature (° F.) and salinity (°/oo), 1960

[39°45.8' N., 73°56.0' W.; water depth: 72 feet]

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.
January						
1	46.9	46.7	46.7	46.8	31.20	-
2	46.5	46.5	46.4	46.3	31.20	-
3	-	-	-	-	-	-
4	45.5	45.6	46.5	46.7	31.49	-
5	45.2	45.1	46.4	46.9	.54	-
6	44.1	44.3	46.1	46.2	.20	-
7	-	-	-	-	.04	-
8	45.0	44.9	45.7	46.7	.33	-
9	45.1	45.1	45.2	45.7	.67	-
10	45.0	45.0	45.1	46.9	31.63	-
11	-	-	-	-	-	-
12	44.1	44.1	44.0	44.0	31.88	-
13	44.0	43.9	44.0	44.0	.81	-
14	43.3	43.0	43.0	43.1	.96	-
15	43.8	43.2	43.3	43.5	.94	-
16	43.1	43.0	43.0	43.6	.77	-
17	43.3	42.9	43.0	43.1	.07	-
18	42.8	42.5	43.0	43.0	.20	-
19	43.0	43.4	43.1	43.0	31.77	-
20	-	-	-	-	-	-
21						
22	-	-	-	-	-	-
23	-	-	-	-	-	-
24	43.2	43.2	43.2	43.0	32.50	-
25	-	-	-	-	-	-
26	42.8	42.7	42.7	42.7	32.29	-
27	40.3	41.2	42.3	42.3	31.01	-
28	41.9	41.7	42.0	42.1	.87	-
29	41.2	42.2	42.7	42.7	.56	-
30	42.0	42.3	42.2	42.2	31.77	-
31	43.0	43.3	42.8	42.5	32.30	-
	-	-	-	-	-	-
Mean	43.7	43.7	44.0	44.2	31.62	
March						
1	-	-	-	-	-	-
2	39.7	39.6	39.7	39.5	31.74	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	39.8	39.9	39.7	39.5	31.13	32.11
7	39.6	39.3	39.4	39.6	32.35	-
8	39.6	39.8	39.4	39.5	.34	-
9	38.2	38.1	38.1	38.6	32.49	-
10	-	-	-	-	-	32.32
11	38.0	38.0	38.0	37.9	32.35	-
12	37.9	37.9	37.9	38.0	.80	-
13	37.9	37.9	37.9	37.9	.33	-
14	38.2	38.1	38.1	38.1	.41	-
15	38.6	38.1	38.0	38.0	.53	-
16	38.9	38.1	38.1	38.1	32.46	-
17	-	-	-	-	-	-
18	38.4	38.2	38.3	38.5	32.43	32.27
19	38.6	38.6	38.8	38.9	.65	-
20	38.8	38.2	38.8	38.9	.20	-
21	-	-	-	-	32.24	-
22	-	-	-	-	-	-
23	38.2	38.1	38.1	38.1	32.04	-
24	39.2	38.5	38.9	39.0	31.90	32.35
25	38.9	38.9	38.8	38.8	32.01	-
26	38.8	38.9	38.7	38.7	31.98	-
27	39.1	38.6	38.9	38.9	31.97	-
28	40.2	39.1	39.1	39.1	31.68	-
29	41.1	39.6	40.0	40.0	31.72	-
30	45.0	45.1	45.1	45.2	32.16	-
31	41.2	40.0	39.5	39.5	31.86	32.53
Mean	39.3	39.0	39.0	39.1	32.16	32.32

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.
February						
1	-	-	-	-	-	-
2	42.9	43.3	43.3	43.3	32.18	-
3	-	-	-	-	-	-
4	43.2	43.0	43.0	42.9	32.38	-
5	41.3	41.9	42.4	42.8	31.02	-
6	-	-	-	-	-	-
7	42.2	41.9	42.9	43.0	31.53	-
8	42.1	42.1	42.1	43.2	31.96	-
9	42.1	42.2	42.6	43.2	32.01	-
10	42.6	42.3	42.7	42.9	31.73	-
11	42.9	42.9	43.0	43.2	31.76	32.48
12	42.9	42.9	42.9	43.0	32.10	-
13	-	-	-	-	.20	-
14	-	-	-	-	32.21	-
15	-	-	-	-	-	-
16	41.7	41.1	41.1	41.2	32.08	-
17	41.6	41.3	41.3	41.3	.12	-
18	41.3	41.3	41.3	41.4	.19	32.15
19	-	-	-	-	32.10	-
20	-	-	-	-	-	-
21	-	-	-	-	-	-
22	40.6	40.4	40.5	40.5	31.92	-
23	-	-	-	-	31.96	-
24	40.3	40.2	40.2	40.2	32.08	-
25	-	-	-	-	-	-
26	40.8	40.5	40.4	40.5	32.23	-
27	-	-	-	-	-	-
28	39.6	39.5	39.5	39.5	31.98	-
29	39.8	39.6	39.6	39.6	31.91	-
Mean	41.6	41.6	41.7	41.9	31.98	-
April						
1	41.8	40.0	39.1	38.9	31.85	-
2	40.6	40.1	39.0	38.5	32.07	-
3	-	-	-	-	-	-
4	41.0	40.7	40.1	39.2	31.85	-
5	-	-	-	-	.74	-
6	41.4	41.5	39.6	39.2	.58	-
7	42.1	41.7	39.5	39.4	.38	-
8	42.8	42.0	41.6	39.8	.60	31.74
9	42.3	41.9	41.6	39.9	31.67	-
10	43.2	42.1	40.2	39.9	30.89	-
11	-	-	-	-	-	-
12	43.6	42.2	42.0	41.9	31.93	-
13	45.3	42.9	42.8	42.2	32.14	-
14	44.8	44.3	43.0	42.8	31.85	32.14
15	46.3	45.5	43.1	42.9	31.58	-
16	46.0	45.0	43.0	42.9	30.85	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-
19	46.9	46.1	43.5	42.8	31.51	-
20	47.9	46.1	45.3	42.9	.31	-
21	47.0	46.2	43.4	43.1	.51	32.44
22	48.0	47.5	44.1	43.0	.72	-
23	49.8	47.1	43.1	43.1	.65	-
24	49.0	48.4	44.0	42.3	.39	-
25	50.1	48.2	42.4	42.2	.45	-
26	51.2	48.8	42.4	42.2	.51	-
27	52.8	49.1	42.2	42.0	.19	-
28	51.4	49.7	41.9	41.9	.13	32.33
29	51.8	51.1	43.0	41.8	31.15	-
30	51.9	51.6	50.0	41.9	-	-
Mean	46.4	45.2	42.4	41.5	31.54	32.16

Table 13.--Barnegat Lightship: temperature (° F.) and salinity (°/oo), 1960.--Continued

[39°45.8' N., 73°56.0' W.; water depth: 72 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.		0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.
May							June						
1	-	-	-	-	-	-	1	63.2	56.4	45.8	45.0	29.00	-
2	51.1	51.0	42.0	41.7	30.04	-	2	65.0	57.1	46.2	45.5	28.89	31.75
3	52.6	51.2	41.5	41.5	.04	-	3	63.5	52.2	46.0	45.6	29.37	-
4	53.3	52.0	41.9	41.8	.12	-	4	60.5	46.4	45.8	45.5	29.83	-
5	54.4	51.6	42.3	41.9	30.41	32.25	5	59.6	47.0	45.9	45.3	30.24	-
6	53.0	49.6	42.1	41.9	29.03	-	6	61.6	47.5	45.8	45.8	30.23	-
7	55.7	54.2	46.4	42.0	30.19	-	7	64.3	50.5	46.3	45.8	29.78	-
8	55.0	54.7	42.8	42.8	.42	-	8	64.0	61.8	47.1	46.8	30.12	-
9	55.6	55.5	44.0	42.9	30.44	-	9	63.5	62.4	47.0	46.0	30.23	31.69
10	-	-	-	-	29.61	-	10	-	-	-	-	-	-
11	56.2	54.6	43.6	42.3	-	-	11	-	-	-	-	-	-
12	57.0	55.2	43.1	42.8	29.71	32.21	12	64.8	64.3	56.4	46.8	30.18	-
13	57.5	56.6	42.7	42.5	.35	-	13	65.1	64.4	60.5	47.2	.38	-
14	57.5	56.1	45.5	42.7	.79	-	14	65.8	64.8	55.0	47.3	.42	-
15	56.0	54.9	42.9	42.5	.07	-	15	64.6	65.0	48.0	47.8	30.26	-
16	58.0	52.5	43.0	42.8	.03	-	16	66.5	65.6	49.2	47.8	29.81	30.13
17	59.0	54.5	42.9	42.8	.37	-	17	67.5	64.7	48.6	47.7	.62	-
18	58.6	54.0	42.8	42.7	.31	-	18	68.0	65.3	47.6	47.1	.87	-
19	60.0	56.0	42.5	42.5	.50	29.51	19	68.4	66.3	51.6	47.6	29.83	-
20	59.9	57.1	42.7	42.3	.43	-	20	69.3	65.6	47.6	47.5	30.01	-
21	61.0	57.0	42.6	42.4	.33	-	21	68.7	67.8	48.7	47.8	29.96	-
22	60.0	59.5	43.1	43.1	29.74	-	22	69.4	68.5	49.0	47.8	30.09	-
23	-	-	-	-	-	-	23	69.6	67.0	48.0	47.5	.08	31.68
24	60.6	59.5	44.0	43.9	29.38	-	24	-	66.6	50.0	-	30.11	-
25	60.0	58.3	45.4	44.1	.40	-	25	-	-	-	-	-	-
26	62.7	58.8	46.1	44.2	29.37	31.83	26	69.7	68.6	47.8	47.8	30.25	-
27	61.8	57.8	46.2	44.2	28.65	-	27	70.3	68.7	48.2	47.8	30.56	-
28	61.7	60.0	46.6	44.5	29.14	-	28	71.0	69.9	47.9	47.8	-	-
29	61.6	57.5	45.6	44.5	.24	-	29	70.5	67.2	47.8	47.8	30.64	-
30	62.0	59.8	48.5	44.5	.31	-	30	71.6	67.9	47.7	47.7	30.65	31.81
31	61.6	59.4	47.3	44.9	29.47	-							
Mean	58.0	55.7	43.9	43.0	29.57	31.45	Mean	66.4	62.2	48.7	46.9	30.02	31.41
July							August						
1	71.5	68.0	48.1	48.1	30.88	-	1	72.1	69.6	52.2	52.1	31.37	-
2	71.0	61.0	48.2	48.2	.89	-	2	71.1	69.8	52.9	52.5	30.31	-
3	68.1	60.0	48.2	48.1	.92	-	3	73.2	63.6	52.9	52.8	29.59	-
4	71.1	63.2	49.0	48.9	.92	-	4	73.0	59.1	52.1	52.1	30.46	31.62
5	72.5	70.7	49.9	48.9	.60	-	5	73.4	69.1	54.0	52.2	.93	-
6	72.6	70.3	49.1	49.0	30.76	-	6	74.1	69.7	61.1	53.0	.83	-
7	69.7	68.6	49.2	49.1	31.07	31.87	7	74.8	70.0	60.0	53.7	30.84	-
8	71.3	70.2	50.7	49.6	.02	-	8	73.0	70.1	60.9	53.8	28.38	-
9	69.9	66.0	51.0	49.8	.09	-	9	74.0	71.0	60.0	54.0	30.66	-
10	71.0	61.0	52.2	50.0	.10	-	10	74.9	69.0	58.1	54.0	-	-
11	70.0	68.8	52.7	49.8	.00	-	11	73.9	68.0	56.7	55.8	30.77	31.61
12	71.9	69.3	52.0	49.8	.43	-	12	74.5	74.1	56.8	55.9	30.78	-
13	72.9	71.2	52.8	49.3	31.07	-	13	74.5	74.3	61.0	55.3	-	-
14	74.0	73.0	53.0	49.2	30.95	31.03	14	74.8	74.3	57.2	57.0	30.92	-
15	-	-	-	-	-	-	15	75.0	74.5	59.2	56.0	30.92	-
16	71.8	69.8	55.6	50.5	31.27	-	16	75.0	74.9	70.1	58.8	31.02	-
17	69.8	69.8	65.5	50.3	30.67	-	17	-	-	-	-	-	-
18	72.0	71.4	57.5	50.2	.49	-	18	-	-	-	-	-	-
19	73.4	73.2	52.5	50.5	.88	-	19	-	-	-	-	-	-
20	73.5	73.2	52.7	50.5	.82	31.38	20	73.1	72.8	72.2	71.4	30.56	-
21	74.0	73.0	52.0	51.0	30.87	-	21	73.2	72.8	72.0	64.0	30.19	-
22	74.0	73.6	52.8	51.0	31.06	-	22	74.3	73.1	72.3	62.1	-	-
23	73.0	72.3	53.0	53.0	.12	-	23	74.7	73.0	71.8	60.8	30.41	-
24	73.2	72.3	52.9	52.8	31.23	-	24	-	-	-	-	-	-
25	74.8	73.8	52.0	51.8	30.99	-	25	72.6	72.5	72.3	62.8	30.60	31.27
26	75.5	72.8	55.5	51.8	31.01	-	26	73.0	72.9	72.6	66.2	-	-
27	-	-	-	-	-	-	27	73.4	72.0	71.2	66.0	30.52	-
28	73.5	72.7	54.4	53.7	31.30	31.93	28	74.0	73.0	70.7	64.8	-	-
29	74.0	73.3	54.7	51.3	31.27	-	29	75.2	73.9	73.1	62.8	30.76	-
30	-	-	-	-	-	-	30	74.5	73.8	71.5	63.7	.88	-
31	70.0	67.9	52.0	51.8	31.28	-	31	72.0	71.3	69.4	57.0	30.74	-
Mean	72.1	69.7	52.5	50.3	31.00	31.55	Mean	73.8	71.2	63.5	58.2	30.57	-

Table 13.--Barnegat Lightship: temperature (° F.) and salinity (°/oo), 1960.--Continued

[39°45.8' N., 73°56.0' W.; water depth: 72 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.		0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.
September							October						
1	76.0	74.3	72.0	58.8	30.70	31.42	1	67.0	66.9	66.8	66.2	30.29	-
2	-	-	-	-	-	-	2	65.0	65.0	64.2	64.1	.81	-
3	-	-	-	-	-	-	3	66.5	65.0	65.0	64.1	.29	-
4	-	-	-	-	-	-	4	65.5	65.5	65.8	64.4	30.42	-
5	73.9	73.6	73.0	62.5	30.92	-	5	65.0	65.1	65.1	64.2	29.98	-
6	73.9	73.5	72.0	62.8	.99	-	6	-	-	-	-	-	-
7	74.1	73.7	72.5	62.8	.50	-	7	65.0	64.9	64.5	64.1	30.38	-
8	74.1	73.9	73.0	62.2	30.89	30.87	8	65.0	64.8	64.7	64.2	.50	-
9	74.1	74.0	72.0	61.7	31.02	-	9	65.0	64.7	64.8	64.0	.69	-
10	74.1	74.1	73.9	61.3	.03	-	10	64.2	64.3	64.4	63.9	.83	-
11	74.2	74.2	74.0	61.8	31.07	-	11	-	64.1	64.1	63.8	.66	-
12	-	-	-	-	-	-	12	63.9	63.9	63.7	63.3	.69	-
13	-	-	-	-	-	-	13	64.0	63.8	63.9	63.7	.76	31.55
14	69.9	69.9	69.9	69.9	31.02	-	14	64.0	63.9	64.0	63.3	30.90	-
15	70.1	70.0	70.0	69.0	30.82	-	15	64.6	64.0	64.0	63.0	31.06	-
16	71.1	70.2	70.2	69.6	31.02	-	16	65.2	64.6	63.9	62.3	.12	-
17	-	-	-	-	-	-	17	65.0	64.9	63.4	62.2	.08	-
18	69.8	69.9	69.9	69.0	31.10	-	18	64.8	64.8	63.1	62.4	.12	-
19	69.9	69.9	69.9	69.1	31.10	-	19	64.7	64.6	64.0	62.6	.28	-
20	69.1	69.1	68.3	67.3	30.66	-	20	64.0	64.2	63.0	62.9	.29	31.30
21	68.1	68.1	68.2	68.2	-	-	21	62.5	62.9	62.9	63.0	.49	-
22	68.1	68.1	68.1	68.1	30.88	-	22	62.7	62.4	62.7	62.8	.40	-
23	67.7	67.5	67.4	67.4	.91	-	23	61.7	62.0	62.0	61.9	.46	-
24	67.8	67.2	67.2	67.1	.71	-	24	-	-	-	-	.69	-
25	67.1	67.1	67.1	67.1	30.77	-	25	60.5	60.5	60.8	60.9	.77	-
26	66.8	66.9	66.9	66.9	-	-	26	60.2	60.4	60.4	60.4	.79	-
27	66.8	66.9	66.9	66.9	-	-	27	60.1	60.1	60.2	60.7	31.81	31.81
28	66.8	66.9	66.9	66.9	30.59	-	28	-	-	-	-	-	-
29	66.9	66.9	66.9	66.9	30.56	-	29	-	-	-	-	-	-
30	66.9	66.9	66.9	66.1	-	-	30	-	-	-	-	-	-
							31	-	-	-	-	-	-
Mean	70.3	70.1	69.7	65.8	30.86	-	Mean	-	-	-	-	-	-
November							December						
1	57.6	58.1	58.0	58.0	31.90	-	1	51.0	51.4	51.5	51.6	31.85	31.84
2	57.8	57.8	57.9	58.0	.87	-	2	49.6	49.7	49.9	50.1	31.84	-
3	56.9	56.8	57.7	58.1	.24	32.04	3	50.5	50.6	50.6	50.7	32.01	-
4	57.2	57.2	57.2	57.2	.96	-	4	50.5	50.5	50.5	50.6	31.90	-
5	56.8	56.8	56.8	56.9	.89	-	5	51.1	51.1	51.1	50.1	.95	-
6	56.1	56.2	56.2	56.2	.85	-	6	50.3	50.3	50.3	50.3	.95	-
7	55.8	55.9	55.9	55.9	.83	-	7	50.1	50.2	50.3	50.4	.77	-
8	55.5	55.2	55.3	55.4	.93	-	8	48.0	48.1	48.2	48.3	.76	-
9	54.9	54.9	55.0	55.1	.86	-	9	48.1	48.2	48.3	48.6	31.92	-
10	54.8	55.2	55.0	55.2	31.66	31.76	10	47.9	48.1	48.1	48.1	32.00	-
11	54.7	54.8	54.8	54.8	-	-	11	46.1	46.3	46.5	46.7	31.92	-
12	54.4	54.6	54.8	54.9	31.82	-	12	-	-	-	-	32.55	-
13	54.8	54.7	54.3	54.3	.75	-	13	-	-	-	-	.55	-
14	55.4	55.1	55.0	55.0	.71	-	14	44.8	45.1	45.2	45.3	.46	-
15	55.0	54.8	54.7	54.5	.54	-	15	44.8	44.8	44.9	44.9	.84	33.12
16	54.9	54.9	55.0	55.2	.61	-	16	45.1	45.2	46.1	46.1	.50	-
17	54.7	55.0	55.1	55.2	.81	31.81	17	46.4	46.5	46.5	46.8	.17	-
18	54.5	54.5	55.0	55.1	.84	-	18	42.0	42.1	42.2	44.1	.17	-
19	55.0	55.0	55.0	55.0	.84	-	19	41.3	41.9	41.9	43.8	.19	-
20	55.3	55.4	55.5	55.5	.96	-	20	42.2	42.2	42.1	42.2	.30	-
21	54.1	54.3	54.4	54.6	.90	-	21	41.9	41.7	42.0	44.2	.26	-
22	-	-	55.1	55.1	.80	-	22	40.3	41.0	41.0	41.8	.17	32.31
23	53.9	53.9	53.9	53.9	.73	-	23	40.1	40.2	40.5	42.0	.10	-
24	53.3	53.5	53.5	53.6	.88	31.87	24	40.0	40.2	40.5	41.7	.24	-
25	53.4	53.8	53.9	53.9	.88	-	25	39.2	39.5	40.6	42.1	.36	-
26	52.2	52.4	52.8	52.9	.82	-	26	38.6	38.6	39.6	40.1	.05	-
27	52.8	52.6	53.1	54.0	.39	-	27	39.8	40.0	40.0	40.1	.01	-
28	53.8	53.7	53.9	-	.61	-	28	39.5	40.1	40.7	40.8	32.19	-
29	54.0	54.0	54.2	54.2	.74	-	29	38.0	37.8	38.5	41.2	31.67	32.02
30	52.9	52.8	53.0	53.0	31.84	-	30	38.6	38.2	39.1	41.1	.77	-
							31	38.4	38.5	39.3	41.0	31.75	-
Mean	54.9	55.0	55.1	55.2	31.77	31.87	Mean	44.3	44.4	44.7	45.3	32.09	32.47

Five Fathom Bank Lightship (fig. 14, table 14)--March, early April, and late December surface water temperatures were below the mean at Five Fathom Bank, while May through October readings were above. At the bottom two separate intrusions of cold water appeared in early June and early July. The 10-day mean bottom maximum of 68.4° F. was the highest recorded in 5 years. Salinity was slightly lower than usual in the early autumn, but otherwise showed little departure from the previous records.

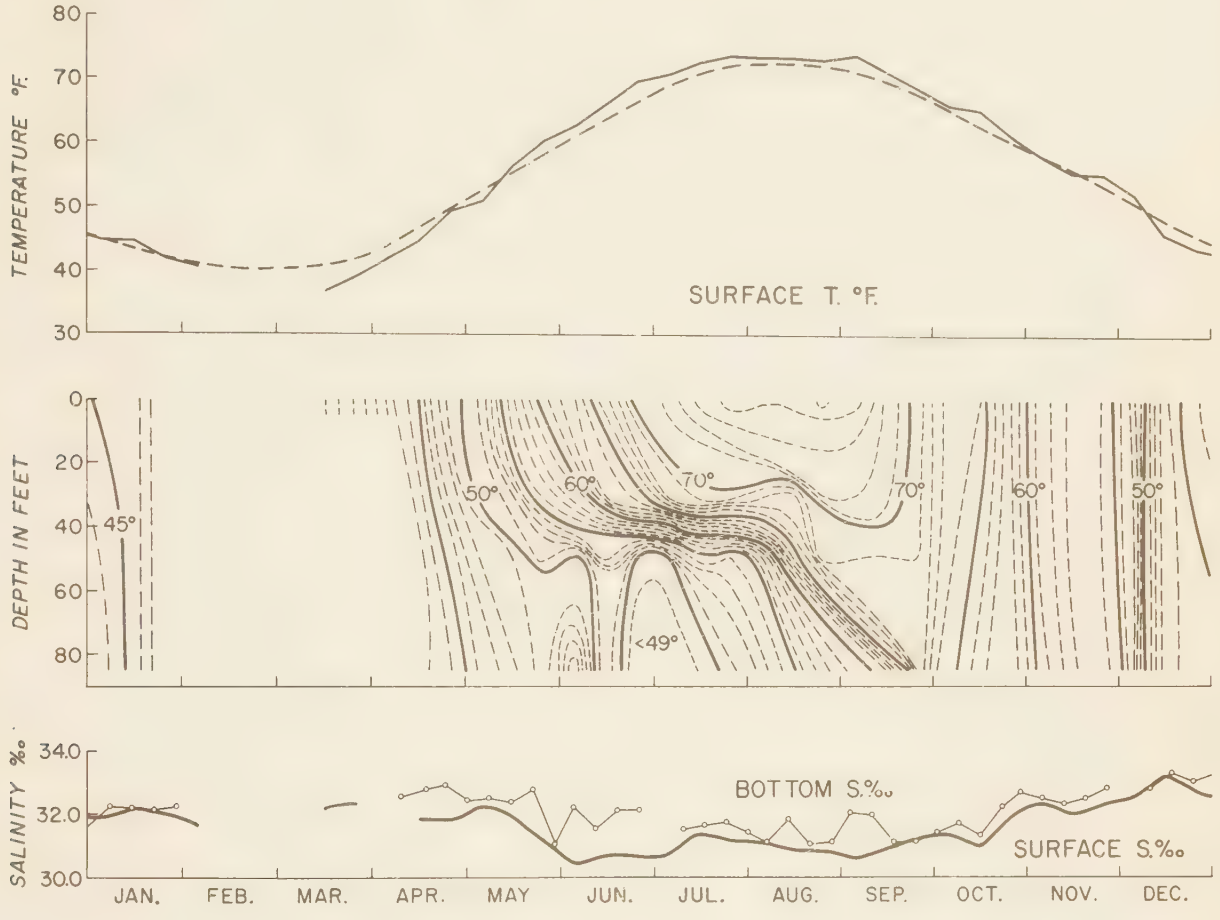

Figure 14.--Five Fathom Bank Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 14.--Five Fathom Bank Lightship: temperature (° F.) and salinity (°/oo), 1960

[38°47.3' N., 74°34.6' W.; water depth: 87 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	85 ft.	0 ft.	85 ft.		0 ft.	30 ft.	50 ft.	85 ft.	0 ft.	85 ft.
January							February						
1	44.0	44.6	44.7	44.8	32.72	-	1	41.3	41.6	41.5	41.5	31.94	-
2	-	-	-	-	31.54	-	2	41.0	41.1	41.2	41.2	.70	-
3	-	-	-	-	32.12	-	3	40.4	40.4	40.5	40.6	.66	-
4	-	-	-	-	.07	-	4	39.8	39.8	39.8	39.8	.55	-
5	-	-	-	-	32.08	-	5	40.1	40.0	-	-	.69	-
6	45.0	45.6	46.3	46.8	31.93	-	6	40.2	40.2	-	-	.60	-
7	44.2	45.1	46.6	46.9	.64	32.28	7	40.8	40.8	-	-	.65	-
8	44.0	45.5	46.3	47.3	.52	-	8	41.2	41.1	-	-	.91	-
9	45.5	46.3	47.0	48.1	.78	-	9	40.9	40.9	-	-	.90	-
10	44.8	45.0	45.1	47.4	31.83	-	10	40.6	41.0	-	-	.33	-
11	45.3	45.6	45.6	45.6	32.16	-	11	41.3	41.6	41.6	41.7	31.60	-
12	44.8	45.0	45.0	45.2	.16	-	12	-	-	-	-	32.20	-
13	45.1	45.1	45.4	45.5	.24	-	13						
14	43.2	43.2	43.3	43.3	.26	32.20	14						
15	44.1	44.0	44.1	44.2	.01	-	15						
16	44.8	44.8	44.8	44.9	.13	-	16						
17	45.1	45.2	45.1	45.2	.32	-	17						
18	44.0	44.4	45.0	45.1	.02	-	18						
19	44.6	44.8	44.8	44.8	.38	-	19						
20	44.0	44.1	44.0	44.2	32.23	-	20						
21	42.3	42.8	43.2	44.1	31.41	32.13	21						
22	41.1	41.4	41.5	42.2	31.70	-	22						
23	42.2	42.6	42.7	42.7	32.29	-	23						
24	41.7	42.0	42.0	42.0	.13	-	24						
25	41.0	41.1	41.1	41.2	.00	-	25						
26	41.3	41.3	41.3	41.3	.06	-	26						
27	42.3	42.2	42.2	42.2	32.23	-	27						
28	42.6	42.6	42.8	42.8	-	32.24	28						
29	42.7	42.9	42.9	42.9	32.32	-	29						
30	42.5	42.4	42.5	42.5	.30	-							
31	41.5	41.9	41.8	41.8	32.18	-							
Mean	43.5	43.8	44.0	44.3	32.06	32.21	Mean	-	-	-	-	-	-
March							April						
1							1	40					
2							2	42					
3							3	42					
4							4	42					
5							5	42					
6							6	42					
7	37				31.99		7	42.5					
8	35				31.99		8	42					
9	35				32.22		9	43.1	43.0	41.3	41.2	32.19	32.58
10	35				.33		10	42.7	42.5	42.5	41.5	.24	-
11	35.5				32.25		11	42.2	42.1	42.1	42.1	.38	-
12	35				-		12	42.2	42.1	42.1	42.1	.37	-
13	35				32.20		13	44.0	43.1	42.1	41.8	32.31	-
14	37				32.60		14	44.5	43.3	41.9	41.8	31.98	-
15	37.5				-		15	45.5	43.1	41.9	41.9	.02	-
16	37				32.27		16	46.7	42.6	42.1	42.1	.14	32.80
17	-				-		17	47.9	43.9	42.8	42.8	.80	-
18	37				32.10		18	45.1	42.9	42.8	42.7	.81	-
19	38				31.92		19	45.1	44.9	42.4	42.1	31.92	-
20	39				-		20	46.1	44.1	42.9	42.5	32.06	-
21	37.5				32.09		21	46.5	45.1	42.6	42.6	31.70	-
22	-				-		22	48.2	44.4	42.9	42.8	30.78	-
23	40				32.14		23	50.3	47.9	44.3	43.0	30.80	32.95
24	-				-		24	48.8	48.0	45.9	43.7	31.94	-
25	-				-		25	49.8	45.0	44.1	44.0	31.89	-
26	38				32.37		26	50.2	45.0	44.2	44.0	32.12	-
27	39				.40		27	51.2	48.2	44.5	44.1	.24	-
28	39				.29		28	51.1	50.8	46.1	45.0	.40	-
29	39				.61		29	49.2	48.2	45.8	45.7	.33	-
30	40				.53		30	49.6	49.3	47.1	-	32.29	32.48
31	40				32.43								
Mean	-	-	-	-	-	-	Mean	45.5	-	-	-	-	32.70

Table 14.--Five Fathom Bank Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[38°47.3' N., 74°34.6' W.; water depth: 87 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	85 ft.	0 ft.	85 ft.		0 ft.	30 ft.	50 ft.	85 ft.	0 ft.	85 ft.
May							June						
1	49.0	47.5	46.4	-	32.18	-	1	62.0	60.7	51.4	45.7	30.24	-
2	49.0	48.8	48.6	45.2	.19	-	2	63.7	60.1	52.3	-	.34	-
3	50.1	49.9	47.7	45.9	.08	-	3	62.0	58.0	46.2	44.3	.81	-
4	50.2	49.0	46.4	45.1	.15	-	4	61.7	57.1	43.6	42.8	.20	32.26
5	50.8	47.9	47.2	45.5	.37	-	5	64.7	59.1	48.3	45.2	.31	-
6	51.9	50.6	47.7	46.3	.44	-	6	66.9	56.3	50.0	46.8	.23	-
7	51.3	49.3	48.5	44.2	.42	32.52	7	-	-	-	-	.39	-
8	54.0	53.8	49.7	-	.35	-	8	61.3	57.4	56.7	48.0	.58	-
9	52.9	52.9	49.0	48.9	32.16	-	9	62.0	61.8	47.6	45.5	30.66	-
10	53.1	52.1	48.8	47.9	-	-	10	64.2	57.0	52.0	-	31.02	-
11	52.2	52.2	49.9	46.8	32.24	-	11	64.4	64.0	61.0	53.0	31.42	31.58
12	54.9	54.0	48.9	-	.18	-	12	63.7	54.8	52.3	52.1	30.93	-
13	55.4	49.6	48.9	48.8	32.13	-	13	64.3	63.7	54.0	-	.92	-
14	55.5	48.5	48.0	48.0	31.81	32.40	14	65.3	64.9	55.5	51.8	.75	-
15	56.0	53.0	47.7	47.2	31.74	-	15	66.0	62.8	55.3	54.8	.89	-
16	56.4	47.3	45.7	45.6	32.14	-	16	67.0	65.2	55.6	52.0	.88	-
17	56.4	50.2	48.1	46.1	31.78	-	17	67.8	65.2	54.4	51.6	.91	-
18	59.2	51.0	48.7	48.0	.73	-	18	68.6	65.0	48.9	-	.23	32.17
19	59.8	53.3	50.3	-	.67	-	19	69.6	65.5	52.6	48.5	.33	-
20	60.1	53.6	50.0	49.9	.68	-	20	69.0	66.6	50.7	50.2	.47	-
21	60.1	54.7	49.2	48.5	.84	32.79	21	69.0	66.0	52.3	50.2	.52	-
22	60.2	60.1	53.5	50.5	.82	-	22	69.8	67.0	52.3	51.2	.64	-
23	-	-	-	-	.30	-	23	70.2	65.4	50.9	49.9	.78	-
24	60.0	55.1	49.4	49.5	31.01	-	24	69.8	65.0	48.6	48.0	.70	-
25	60.2	53.8	49.9	-	30.99	-	25	67.8	56.5	45.2	45.2	.75	32.15
26	61.4	57.2	-	-	31.04	-	26	69.9	69.0	48.7	47.2	.71	-
27	62.1	51.1	50.1	49.8	.17	-	27	70.6	69.7	50.6	47.2	.73	-
28	61.2	60.4	51.6	50.8	.20	31.08	28	70.2	68.8	49.4	48.1	30.78	-
29	58.8	58.4	52.7	50.9	31.14	-	29	73.2	62.0	51.0	48.9	-	-
30	-	-	-	-	30.65	-	30	70.6	59.7	46.5	46.2	-	-
31	61.0	57.6	54.6	47.8	30.63	-							
Mean	56.0	52.5	49.2	47.7	31.74	32.20	Mean	66.7	62.5	51.1	48.6	30.65	32.34
July							August						
1	71.8	63.6	48.7	-	30.15	-	1	72.3	69.7	54.2	-	31.25	-
2	-	-	-	-	.55	-	2	73.2	71.7	56.6	-	.18	-
3	70.0	62.0	49.1	46.8	.23	-	3	73.9	65.1	53.7	53.0	.14	-
4	69.2	68.1	47.2	46.6	.39	-	4	74.7	65.1	52.5	-	.25	-
5	71.0	70.3	49.0	47.7	.41	-	5	74.9	64.4	60.5	-	.07	-
6	70.9	70.6	51.5	49.0	30.58	-	6	74.8	69.8	60.0	57.6	.11	31.15
7	71.0	71.0	49.8	47.0	31.07	-	7	-	-	-	-	.12	-
8	72.5	72.0	52.2	50.8	.19	-	8	74.7	72.9	56.9	-	.25	-
9	73.2	69.9	50.1	50.0	.53	31.53	9	-	-	-	-	31.19	-
10	71.8	71.4	47.7	47.3	.63	-	10	-	-	-	-	30.82	-
11	72.0	69.7	50.6	47.8	.55	-	11	76.1	71.0	59.3	55.8	30.78	-
12	73.0	68.2	52.3	-	.55	-	12	74.7	58.8	58.1	57.8	31.09	-
13	74.0	66.0	50.4	-	.32	-	13	73.3	58.9	57.7	-	.08	31.49
14	71.0	50.3	49.4	-	.17	-	14	74.2	68.4	59.6	-	31.06	-
15	73.0	73.1	67.0	-	.42	-	15	75.5	64.6	59.3	-	30.54	-
16	73.8	72.2	55.0	-	.42	31.68	16	74.1	69.4	62.7	58.8	30.02	-
17	73.5	72.8	55.0	-	.30	-	17	73.4	73.2	73.0	-	31.20	-
18	75.0	74.8	57.0	51.6	.34	-	18	72.3	72.2	72.2	72.2	.54	-
19	75.2	75.2	56.7	-	.32	-	19	-	-	-	-	.21	-
20	72.3	69.0	49.8	49.3	.36	-	20	73.0	72.9	72.8		.01	32.39
21	76.0	75.9	61.0	50.2	.34	-	21	73.8	73.4	71.4	-	31.09	-
22	76.0	75.9	63.0	53.0	.41		22	73.7	72.1	69.5	-	30.79	-
23	75.0	52.0	51.1	50.8	31.38	31.78	23	75.1	71.6	65.2	-	30.48	-
24	73.3	64.4	50.0	50.0	30.52	-	24	73.6	73.3	70.9	-	30.[illegible]	-
25	76.0	71.8	51.1	50.2	31.20	-	25	72.7	72.4	72.2	-	.13	-
26	76.2	76.2	55.6	52.0	.38	-	26	72.1	72.0	71.8	-	.08	-
27	74.5	58.0	53.0	52.8	.08	-	27	72.9	72.6	71.8	69.7	.22	31.[illegible]
28	73.2	65.0	48.0	47.5	.20	-	28	74.3	72.4	70.1	-	.02	-
29	75.4	67.9	50.3	49.2	.20	-	29	75.0	72.6	66.3	-	31.[illegible]	-
30	71.7	71.3	57.0	-	.13	-	30	75.2	72.0	64.2	-	30.[illegible]	-
31	71.0	69.3	52.0	51.8	31.21	31.48	31	-	-	-	-	30.43	-
Mean	73.1	69.3	52.7	-	31.11	31.62	Mean	74.0	69.7	63.9	-	30.[illegible]	31.32

Table 14.--Five Fathom Bank Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[38°47.3' N., 74°34.6' W.; water depth: 87 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	85 ft.	0 ft.	85 ft.		0 ft.	30 ft.	50 ft.	85 ft.	0 ft.	85 ft.
September							October						
1	75.0	-	-	-	30.31	-	1	68.0	68.0	68.0	66.0	31.30	31.45
2	-	-	-	-	-	-	2	68.7	68.7	68.7	68.7	.23	-
3	75.0	74.3	67.6	-	30.57	32.09	3	68.1	68.0	67.9	66.3	.24	-
4	74.1	71.0	-	-	.66	-	4	67.2	67.1	67.2	65.9	.27	-
5	74.0	-	-	-	.69	-	5	65.2	65.1	65.1	64.5	.77	-
6	74.5	-	-	-	.72	-	6	65.5	64.9	64.8	64.8	.69	-
7	-	-	-	-	.71	-	7	67.0	67.0	65.2	64.8	.35	-
8	-	-	-	-	.72	-	8	66.2	66.2	66.0	64.8	.30	32.72
9	-	-	-	-	.73	-	9	65.7	66.1	64.0	63.9	.33	-
10	-	-	-	-	.58	32.00	10	66.5	66.4	65.0	64.5	.20	-
11	76.0	75.2	61.8	56.2	30.80	-	11	66.2	66.2	65.2	64.1	.15	-
12	-	-	-	-	-	-	12	65.8	64.3	63.9	63.8	.51	-
13	71.5	71.2	64.8	61.9	30.97	-	13	66.0	65.9	64.7	63.1	.53	-
14	71.8	71.3	70.8	58.9	.79	-	14	66.2	65.8	64.8	63.2	31.26	-
15	71.7	71.2	70.8	58.5	.98	-	15	66.2	65.7	63.9	62.8	30.76	31.34
16	71.4	71.0	70.5	60.5	.92	-	16	66.7	65.2	64.0	62.8	29.61	-
17	71.5	71.3	71.1	-	30.90	31.13	17	67.0	66.0	64.7	62.8	30.81	-
18	70.9	70.5	69.8	61.0	31.04	-	18	65.9	65.6	63.9	62.8	31.40	-
19	70.8	70.2	69.6	67.2	31.32	-	19	65.6	65.6	63.6	63.2	31.63	-
20	71.9	71.2	70.5	-	30.93	-	20	66.1	64.8	64.0	64.2	30.55	-
21	71.0	71.0	70.9	69.9	31.17	-	21	64.2	64.2	64.3	64.0	31.72	-
22	69.9	69.8	69.6	69.5	.20	-	22	63.5	63.5	63.6	-	31.37	32.25
23	69.7	69.7	69.5	69.3	.25	-	23	63.9	63.9	64.0	64.1	32.01	-
24	69.7	69.5	69.4	69.1	.12	31.13	24	63.3	63.4	63.7	64.1	32.26	-
25	69.0	68.9	68.7	68.4	.32	-	25	62.0	62.2	62.3	63.2	31.58	-
26	70.0	70.0	69.9	69.8	.32	-	26	61.3	62.0	63.5	-	.70	-
27	69.1	69.1	69.0	66.2	.32	-	27	60.9	61.0	62.0	62.8	31.81	-
28	68.2	67.9	67.2	66.7	.26	-	28	61.0	61.0	61.0	-	32.13	-
29	68.8	68.6	68.0	-	.23	-	29	-	-	61.2	61.4	.66	32.70
30	69.0	68.6	68.0	66.9	31.21	-	30	61.0	61.0	61.0	61.0	.38	-
							31	61.0	61.0	61.0	61.0	32.09	-
Mean	[illegible]	-	-	-	30.96	31.59	Mean	65.1	64.9	64.3	63.9	31.47	32.09
November							December						
1	59.5	59.5	59.8	59.8	32.41	-	1	55.0	55.0	55.0	55.0	32.36	-
2	59.8	59.7	59.8	-	.15	-	2	-	-	-	-	-	-
3	59.5	59.8	59.9	-	.19	-	3	53.3	54.0	54.0	-	32.54	-
4	58.9	59.1	59.1	-	.31	-	4	53.6	53.6	53.6	-	.71	-
5	58.6	58.7	59.0	-	.29	32.51	5	53.2	53.7	53.8	-	.62	-
6	58.5	58.3	58.5	58.6	.34	-	6	53.0	53.0	53.1	-	.53	-
7	58.0	58.0	58.2	-	.42	-	7	52.5	53.1	53.6	54.0	.29	-
8	-	-	-	-	.41	-	8	52.5	52.5	52.8	52.8	.58	-
9	57.5	57.7	57.8	-	.51	-	9	51.5	51.7	51.8	52.0	.92	-
10	57.7	57.9	57.8	57.8	32.54	-	10	51.6	51.6	51.6	-	32.68	32.84
11	56.7	56.8	56.8	-	31.96	-	11	50.5	51.2	51.6	-	33.45	-
12	56.5	56.5	56.5	56.5	32.34	32.37	12	-	-	-	-	-	-
13	-	-	-	-	.40	-	13	47.5	48.0	47.9	47.9	34.46	-
14	55.3	56.2	56.5	-	.03	-	14	47.1	47.1	47.0	47.0	32.88	-
15	55.1	55.1	55.3	-	.08	-	15	46.0	45.9	46.0	46.2	.61	-
16	57.0	56.7	56.5	56.6	32.52	-	16	-	-	-	-	.58	-
17	57.0	57.8	57.9	58.0	31.69	-	17	44.3	44.8	45.0	-	.65	33.31
18	56.4	56.4	57.6	58.0	.72	-	18	46.1	47.1	47.4	-	.63	-
19	56.0	56.5	57.2	57.5	31.54	32.50	19	43.2	43.2	43.2	43.2	32.81	-
20	57.0	57.0	57.0	57.0	32.43	-	20	46.2	46.3	46.3	46.5	35.09	-
21	56.5	56.9	56.9	56.9	.60	-	21	-	47.1	47.1	47.1	32.93	-
22	55.9	55.8	55.7	55.5	.48	-	22	46.8	47.0	47.0	-	33.01	-
23	56.3	56.6	57.0	57.5	.31	-	23	45.8	45.8	45.8	47.0	32.87	-
24	57.0	57.0	57.3	57.7	.55	-	24	43.8	44.0	45.2	45.3	.76	33.09
25	55.7	55.7	55.7	-	.36	-	25	44.3	44.6	45.1	45.9	.92	-
26	54.9	54.9	55.0	55.0	.39	32.84	26	43.0	45.0	45.5	45.5	.22	-
27	56.0	56.1	56.1	56.1	32.42	-	27	43.5	44.0	45.5	46.0	32.17	-
28	-	55.5	56.7	57.0	31.59	-	28	44.8	44.8	44.8	44.9	33.40	-
29	55.5	55.9	56.2	56.5	32.19	-	29	43.5	43.6	44.0	44.5	32.70	-
30	56.0	56.1	56.1	56.1	32.66	-	30	43.3	43.7	45.0	45.4	.65	-
							31	43.8	43.7	44.7	44.8	32.73	-
Mean	57.0	57.1	57.3	-	32.26	32.56	Mean	47.8	48.0	48.3	-	32.85	-

Winter Quarter Lightship (fig. 15, table 15)--The surface water temperature regime at Winter Quarter was similar to that at other stations in that conditions were generally above the mean except during March. July data were lost owing to instrument failure, but the inflection of the isotherms on either side of the gap in the profile indicate that an intrusion of cold bottom water probably occurred during the month. The bottom temperature of 68.6° F. in late September is the highest recorded in the 5 years of this program. The surface salinity from mid-September through mid-October was considerably lower than in other years, while the depression in mid-December has no precedent at this station.

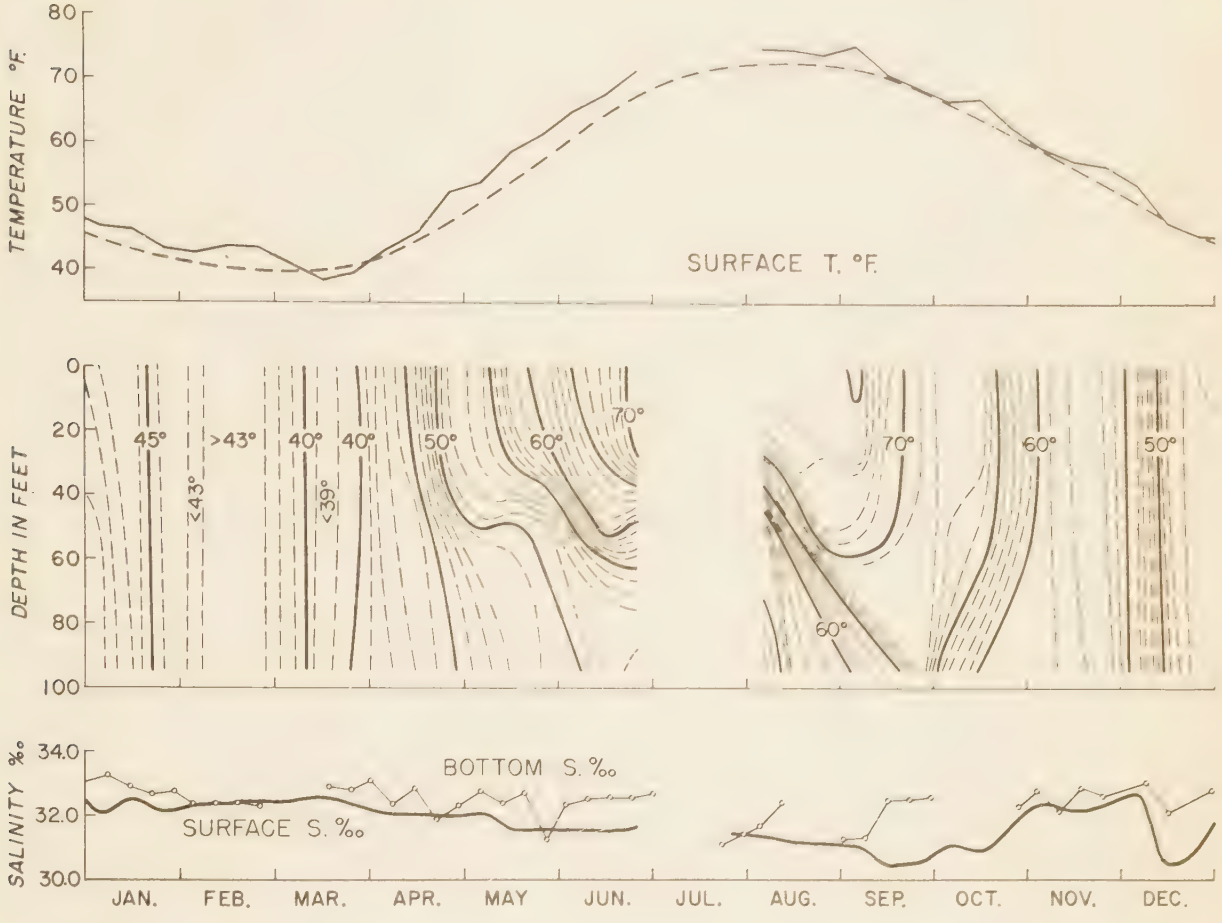

Figure 15.--Winter Quarter Lightship. (Dashed line in upper diagram mean for period 1925-40.)

Table 15.--Winter Quarter Lightship: temperature (° F.) and salinity (°/oo) 1960

[37°55' 05" N., 74°56' 04" W.; Water depth: 96 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	96 ft.	0 ft.	96 ft.		0 ft.	30 ft.	50 ft.	96 ft.	0 ft.	96 ft.
							February						
1	43.9	48.9	48.8	48.8	32.99	-	1	-	-	-	-	-	-
2	48.4	48.4	48.4	48.3	32.80	-	2	44.6	44.6	44.5	44.5	32.64	-
3	-	-	-	-	-	-	3	43.8	43.8	43.8	43.8	.55	-
4	49.1	49.1	49.1	49.1	-	-	4	40.7	40.7	40.7	40.8	.38	32.37
5	48.1	48.0	48.9	48.9	32.22	-	5	42.3	42.2	42.2	42.2	32.19	-
6	45.5	48.8	49.0	49.1	31.36	-	6	-	-	-	-	-	-
7	46.1	48.0	49.4	49.3	.90	33.26	7	42.6	42.7	42.7	-	32.17	-
8	45.8	45.7	49.6	49.6	.53	-	8	42.5	42.5	42.5	42.5	.24	-
9	45.9	48.8	49.2	49.2	31.60	-	9	43.3	43.4	43.4	43.4	32.51	-
10	46.5	46.5	47.8	49.2	32.05	-	10	43.5	43.5	43.4	-	31.80	-
11	46.8	46.8	46.7	48.3	.31	-	11	44.2	43.9	43.9	43.6	32.23	32.34
12	46.8	46.9	46.9	47.1	.65	-	12	44.0	44.0	44.0	44.8	.37	-
13	46.1	46.1	46.1	47.5	.33	-	13	-	-	-	-	32.11	-
14	47.0	47.1	47.1	47.1	.92	32.90	14	-	-	-	-	-	-
15	47.0	47.0	47.0	46.9	.67	-	15	43.2	43.2	43.2	43.2	32.37	-
16	46.9	46.9	46.9	47.2	.63	-	16	44.1	44.1	44.1	44.1	.37	-
17	45.9	46.1	46.1	47.2	.45	-	17	43.9	43.9	44.0	44.0	.41	-
18	45.9	46.1	46.9	46.9	.47	-	18	44.2	44.0	43.9	-	32.37	32.38
19	45.8	45.8	46.2	46.5	.18	-	19	-	-	-	-	-	-
20	45.8	45.8	45.8	45.8	.45	-	20	44.0	44.0	44.0	44.1	32.55	-
21	45.2	45.8	45.8	45.8	.64	32.65	21	44.0	44.4	44.4	44.3	.51	-
22	44.4	44.6	44.6	44.6	.42	-	22	43.9	43.9	43.8	43.9	.34	-
23	43.8	43.6	43.7	43.8	.27	-	23	43.5	43.5	43.5	43.5	.12	-
24	43.1	43.3	43.8	43.9	.19	-	24	43.2	43.2	43.1	43.1	.40	-
25	43.2	43.3	43.3	43.6	32.46	-	25	-	-	-	-	.25	32.25
26	42.1	42.3	43.1	43.2	31.81	-	26	43.9	43.8	43.8	43.8	.32	-
27	42.8	42.8	43.0	44.3	.85	-	27	43.1	43.4	43.5	43.7	.37	-
28	42.9	42.4	43.0	43.9	.55	32.72	28	43.3	43.4	43.6	43.7	.42	-
29	43.0	43.2	43.6	43.9	31.96	-	29	43.8	43.9	44.0	44.1	32.41	-
30	43.3	43.3	43.3	43.5	-	-							
31	-	-	-	-	-	-							
Mean	45.5	45.9	46.3	46.6	32.25	32.80	Mean	43.5	43.5	43.5	43.6	32.34	32.34
							April						
March													
1	42.7	42.8	42.8	43.0	31.26	-	1	42.2	42.0	41.5	41.1	32.04	-
2	42.4	42.4	42.4	42.4	30.89	-	2	42.5	42.0	41.4	41.3	.12	-
3	-	-	-	-	-	-	3	42.4	42.1	41.8	41.2	.51	-
4	-	-	-	-	-	-	4	42.3	42.2	42.1	41.2	.50	-
5	-	-	-	-	-	-	5	43.2	42.6	42.4	42.0	.15	-
6	-	-	-	-	-	-	6	43.3	43.1	43.0	42.2	32.05	-
7	40.0	40.2	40.2	40.2	32.74	-	7	-	-	-	-	31.31	32.33
8	-	-	-	-	.59	-	8	44.6	43.7	43.0	42.4	.82	-
9	39.1	39.3	39.3	39.3	32.71	-	9	44.8	44.5	42.9	42.8	31.77	-
10	-	-	-	-	-	-	10	44.1	44.0	43.4	42.2	32.30	-
11	38.2	38.1	38.1	38.1	33.13	-	11	44.1	44.0	43.9	43.1	.19	-
12	38.4	38.4	38.4	38.4	.43	-	12	43.8	43.8	43.3	43.1	.45	-
13	38.9	38.9	38.9	38.9	.34	-	13	44.8	43.6	43.7	43.3	.37	-
14	38.8	38.8	38.8	37.8	.23	-	14	46.0	45.7	43.6	43.6	32.08	32.82
15	39.0	39.0	39.1	39.1	.45	-	15	46.8	45.0	43.6	43.6	31.86	-
16	39.0	39.0	39.0	39.0	.59	-	16	47.6	46.9	44.7	43.8	.79	-
17	39.0	39.0	39.0	39.4	.87	32.88	17	-	-	-	-	.68	-
18	39.0	39.0	39.0	39.8	.96	-	18	48.0	45.4	42.6	42.7	.82	-
19	39.0	39.0	39.0	40.2	.97	-	19	48.9	49.1	45.0	44.3	.86	-
20	39.0	39.0	39.0	40.2	.62	-	20	-	-	-	-	.86	-
21	39.0	39.0	39.0	40.0	32.21	-	21	50.5	49.6	-	43.9	.83	31.86
22	-	-	-	-	-	-	22	51.0	50.2	44.8	43.8	.77	-
23	39.0	39.0	39.0	39.0	32.58	-	23	52.5	50.4	45.3	43.9	31.81	-
24	39.1	39.1	39.1	39.2	.59	32.79	24	51.5	50.6	45.9	44.8	32.00	-
25	39.1	39.1	39.1	40.2	.48	-	25	52.2	51.3	48.0	44.9	31.99	-
26	-	-	-	-	.52	-	26	54.9	51.8	46.0	45.1	-	-
27	39.0	39.0	39.0	40.2	.41	-	27	54.2		46.0	45.1	31.95	-
28	39.1	39.1	39.1	40.8	32.33	-	28	52.9	52.6	50.5	45.0	32.06	32.30
29	39.0	39.0	39.0	40.4	31.81	-	29	52.2	52.1	50.4	45.9	31.94	-
30	-	-	-	40.8	32.32	-	30	-	-	-	-	31.98	-
31	39.0	39.0	39.1	41.5	31.98	33.07							
Mean	-	-	-	-	-	-	Mean	47.4	46.5	44.4	43.3	32.00	32.33

Table 15.--Winter Quarter Lightship: temperature (° F.) and salinity (°/oo), 1960--Cont

[37°55' 05" N., 74°56' 04" W.; Water depth: 96 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	96 ft.	0 ft.	96 ft.		0 ft.	30 ft.	50 ft.	96 ft.	0 ft.	96 ft.
May							June						
1	52.2	52.0	46.9	46.1	32.07	-	1	-	60.3	56.5	49.2	31.88	-
2	52.5	52.2	50.8	45.5	.14	-	2	64.0	57.0	52.5	49.4	.64	32.42
3	53.0	52.3	51.9	46.9	32.17	-	3	64.0	61.0	53.0	48.8	.03	-
4	52.8	52.2	52.0	46.5	31.99	-	4	64.5	61.0	55.8	48.2	.08	-
5	53.3	52.9	51.6	47.0	32.02	32.72	5	65.4	62.8	56.7	48.2	.20	-
6	54.3	53.5	51.6	46.8	.07	-	6	-	63.2	56.4	48.2	.02	-
7	54.3	53.9	48.7	46.8	.18	-	7	67.2	62.9	53.6	50.0	.53	-
8	55.2	53.9	50.8	46.6	.01	-	8	66.5	64.7	55.8	50.2	.96	-
9	55.3	54.9	52.5	46.7	32.05	-	9	65.0	64.4	57.5	52.5	31.72	32.50
10	55.3	54.2	51.7	47.2	31.81	-	10	64.5	64.4	58.5	-	32.25	-
11	55.2	55.1	49.6	46.8	.94	-	11	63.0	62.3	62.1	-	32.10	-
12	57.0	54.4	48.9	47.8	.77	32.38	12	64.5	63.5	62.7	-	31.86	-
13	58.3	54.0	48.5	48.2	31.53	-	13	66.0	65.0	63.8	56.0	.38	-
14	57.7	54.9	49.7	48.7	32.04	-	14	-	64.2	63.0	-	.34	-
15	57.9	51.0	48.1	47.9	31.78	-	15	67.2	65.0	61.6	56.0	.43	-
16	59.3	55.0	49.1	47.0	.22	-	16	68.1	66.3	63.3	53.1	.32	32.53
17	60.8	56.4	49.3	48.0	.11	-	17	69.8	68.5	62.6	53.0	.29	-
18	61.8	55.0	48.6	48.0	.29	-	18	70.0	66.4	60.2	50.2	.28	-
19	59.2	59.0	51.6	49.7	.35	32.68	19	70.0	67.0	61.0	50.2	.47	-
20	60.0	57.8	51.1	50.1	.22	-	20	69.8	67.7	58.0	50.5	.51	-
21	60.0	52.9	50.0	49.0	.47	-	21	69.3	68.8	59.0	-	.56	-
22	59.7	57.0	50.7	50.0	.27	-	22	-	-	-	-	.66	-
23	-	-	-	-	.54	-	23	69.1	68.6	60.6	52.8	.47	32.52
24	61.6	59.7	49.6	48.8	.03	-	24	70.5	68.0	55.0	51.2	.60	-
25	62.1	53.7	50.3	48.8	.08	-	25	70.2	69.8	57.5	50.5	.53	-
26	62.8	60.8	49.6	47.9	.22	31.22	26	71.4	70.4	60.0	50.4	.69	-
27	63..	61.5	48.6	47.9	31.57	-	27	71.8	70.8	60.5	50.8	.71	-
28	-	-	-	-	-	-	28	73.0	69.5	60.0	51.5	31.72	-
29	61.6	61.0	51.9	49.8	32.06	-	29	73.3	71.3	62.0	52.6	-	-
30	61.6	60.5	54.1	50.5	.39	-	30	73.1	72.3	58.5	49.5	31.61	32.69
31	61.3	60.5	52.2	49.9	32.31	-							
Mean	57.9	55.6	50.3	48.0	31.72	32.25	Mean	68.1	65.8	58.9	51.0	31.55	32.53
July							August						
1					30.96	31.93	1	73.3	71.1	58.9	53.0	31.20	-
2					.94	-	2	73.3	71.2	57.2	54.0	.14	-
3					30.99	-	3	73.8	71.0	53.9	51.8	.40	-
4					-	-	4	74.1	72.2	59.9	52.0	.40	31.66
5					31.04	-	5	-	-	-	-	.38	-
6					-	-	6	-	-	-	-	.41	-
7					-	-	7	75.3	61.6	55.4	-	.33	-
8					-	-	8	76.5	62.7	56.7	53.6	.27	-
9					30.96	-	9	76.7	64.8	56.5	-	.37	-
10					-	-	10	76.3	70.4	55.2	52.0	31.36	-
11					-	-	11	74.9	71.3	59.0	51.5	30.71	32.40
12					-	-	12	74.0	71.7	57.3	54.3	30.93	-
13					-	-	13	75.8	74.9	69.7	-	31.33	-
14					31.37	-	14	-	-	-	-	.22	-
15					31.26	-	15	-	-	-	-	.20	-
16					-	-	16	76.9	76.7	62.1	54.8	31.33	-
17					-	-	17	-	-	-	-	-	-
18					31.30	-	18	-	-	-	-	-	-
19					31.21	-	19	73.4	72.2	72.1	72.0	31.08	-
20					-	-	20	74.1	73.6	72.0	-	.11	-
21					-	-	21	74.1	73.6	72.8	-	31.00	-
22					31.09	31.08	22	74.8	73.1	72.8	61.0	30.92	-
23					.37	-	23	75.2	73.4	72.3	58.2	30.90	-
24					.33	-	24	-	-	-	-	-	-
25					.49	-	25	-	-	-	-	-	-
26					.49	-	26	-	-	-	-	31.27	-
27					.46	-	27	72.3	71.3	70.8	-	.46	-
28					.43	-	28	73.5	71.9	71.8	-	31.36	-
29					.32	31.40	29	-	-	-	-	31.32	-
30					31.60	-	30	-	-	-	-	.32	-
							31	-	-	-	-	30.97	-
Mean					-	-	Mean	74.6	71.0	63.5	-	31.18	-

Table 15.--Winter Quarter Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[37 55' 05" N., 74 56' 04" W.; water depth: 96 feet]

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	96 ft.	0 ft.	96 ft.
September						
1	76.5	75.6	72.5	60.3	-	31.25
2	76.5	74.0	72.5	58.6	30.62	-
3	76.0	74.8	71.0	61.0	31.24	-
4	74.0	74.3	72.0	63.0	30.98	-
5	75.0	74.9	72.2	59.2	.81	-
6	74.5	74.4	73.6	60.0	30.94	-
7	75.0	74.5	73.2	63.8	32.60	-
8	75.0	74.9	69.5	63.2	31.44	31.28
9	76.0	75.4	71.0	56.5	29.82	-
10	-	-	-	-	-	-
11	-	-	-	-	30.15	-
12	-	-	-	-	-	-
13	-	-	-	-	30.27	-
14	70.2	70.4	70.1	55.0	.04	-
15	-	-	-	-	.49	32.44
16	72.0	70.6	70.0	-	.66	-
17	71.5	71.5	71.5	-	.52	-
18	70.7	70.5	69.8	68.0	.50	-
19	71.2	70.2	69.5	65.0	.50	-
20	71.5	70.6	70.2	-	.59	-
21	-	-	-	-	.93	-
22	69.9	69.9	69.5	69.5	.71	32.47
23	69.3	69.3	69.3	69.2	.33	-
24	69.9	69.9	-	-	.82	-
25	-	-	-	-	.76	-
26	68.0	68.1	68.1	68.1	.53	-
27	68.1	68.1	68.2	68.0	30.31	-
28	-	-	-	-	29.75	-
29	-	-	-	-	30.07	32.54
30	-	-	-	-	31.11	-
Mean	-	-	-	-	30.65	32.00
November						
1	61.0	61.0	61.0	61.0	32.74	-
2	60.2	60.2	60.2	-	.75	-
3	60.3	60.8	60.8	60.8	.74	32.72
4	59.2	59.8	59.8	60.0	32.62	-
5	-	-	-	-	31.66	-
6	58.0	58.2	58.4	59.1	32.06	-
7	-	-	-	-	31.98	-
8	58.4	58.4	58.4	58.4	32.32	-
9	-	-	-	-	.33	-
10	58.5	58.4	58.4	58.8	.10	32.10
11	57.4	57.7	57.7	57.8	32.02	-
12	57.2	57.4	57.6	57.7	31.98	-
13	-	-	-	-	32.00	-
14	57.1	57.5	57.8	-	32.10	-
15	57.0	57.5	57.5	57.6	31.96	-
16	57.3	57.2	57.3	58.1	31.96	-
17	58.1	58.3	58.5	59.0	32.46	32.82
18	57.4	57.7	58.1	58.9	.13	-
19	57.9	57.7	57.8	59.0	.24	-
20	57.9	57.9	58.0	58.0	.54	-
21	57.5	57.6	57.7	57.9	.49	-
22	57.7	57.8	57.8	58.0	.59	-
23	57.0	57.8	58.0	58.9	.10	-
24	57.0	57.3	57.5	57.8	.60	32.59
25	56.5	56.8	56.9	57.0	.36	-
26	56.5	56.8	56.9	57.2	.32	-
27	56.5	56.9	57.0	57.3	32.45	-
28	56.2	56.1	57.3	57.7	31.95	-
29	56.1	56.5	57.2	57.6	31.88	-
30	56.8	56.8	57.0	58.3	32.53	-
Mean	57.7	57.9	58.1	58.4	32.27	32.56

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	96 ft.	0 ft.	96 ft.
October						
1	66.1	66.6	66.5	-	31.55	-
2	67.1	67.1	67.2	-	.35	-
3	67.8	67.7	65.9	64.2	.28	-
4	67.0	67.3	67.5	67.0	31.27	-
5	66.6	67.0	66.6	63.5	30.81	-
6	67.0	67.2	66.8	60.5	.42	-
7	67.0	67.5	67.5	63.2	.86	-
8	67.1	67.2	67.0	61.5	30.94	-
9	67.0	67.0	67.0	61.0	31.00	-
10	67.0	67.2	67.0	61.0	30.82	-
11	67.6	67.5	67.4	60.3	30.85	-
12	67.5	67.5	67.4	58.0	31.16	-
13	67.5	67.6	67.0	58.7	31.18	-
14	67.3	67.4	65.3	59.0	30.74	-
15	67.5	67.0	64.2	61.2	.34	-
16	69.0	68.0	67.5	60.5	.58	-
17	68.0	67.5	65.6	-	30.50	-
18	66.0	65.5	64.9	-	31.15	-
19	66.0	66.3	66.0	-	31.13	-
20	67.0	66.7	62.8	60.8	30.97	-
21	64.4	65.6	65.6	61.5	31.15	-
22	64.9	65.0	-	-	.16	-
23	63.1	63.2	63.2	62.6	31.46	-
24	-	-	-	-	-	-
25	-	-	-	-	-	-
26	-	-	-	-	31.96	-
27	61.2	61.8	61.9	60.4	31.81	32.25
28	-	-	-	-	-	-
29	-	-	-	-	-	-
30	-	-	-	-	-	-
31	60.0	60.2	60.3	60.5	32.74	-
Mean	-	-	-	-	-	-
December						
1	-	-	-	-	-	-
2	55.5	55.7	-	-	32.82	-
3	54.6	54.8	54.8	54.8	.72	-
4	54.3	54.7	54.8	54.8	.72	-
5	54.2	54.3	54.2	54.2	.65	-
6	54.2	54.2	54.2	54.2	.56	-
7	54.2	54.1	54.9	55.5	.58	-
8	54.0	54.1	54.1	55.0	.75	33.01
9	53.0	53.0	53.0	53.0	.65	-
10	52.1	52.2	52.3	52.8	.62	-
11	53.1	53.2	53.2	53.7	32.99	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	49.2	49.3	49.3	49.3	28.07	-
15	45.7	46.2	46.6	-	30.34	32.08
16	46.9	47.4	48.7	49.0	32.34	-
17	46.8	46.9	47.0	48.2	30.84	-
18	-	-	-	-	-	-
19	46.2	46.7	46.8	47.7	30.21	-
20	46.0	46.1	46.2	46.5	28.20	-
21	-	-	-	-	27.54	-
22	45.4	45.9	45.8	45.8	31.23	-
23	45.8	45.8	45.8	45.9	32.51	-
24	43.9	45.7	-	-	28.69	-
25	-	-	-	-	-	-
26	45.4	45.3	45.7	46.0	28.79	-
27	46.9	47.0	47.0	47.0	32.82	-
28	46.8	47.2	47.3	-	.82	-
29	47.1	46.8	47.0	-	.67	32.78
30	46.1	46.8	46.9	-	32.82	-
31						
Mean	49.5	49.7	49.8	50.7	31.48	-

Chesapeake Lightship (fig. 16, table 16)--The drop in surface water temperature in March equaled the record low of 1958 at this station; May through October values, however, were above the mean, while December was below normal. This regime closely parallels the trends at all stations to the north as far as Barnegat Lightship, while to the south of Cape Hatteras different conditions prevailed. The cold water intrusion at the bottom in midsummer is now considered normal as are the relatively extreme salinity fluctuations.

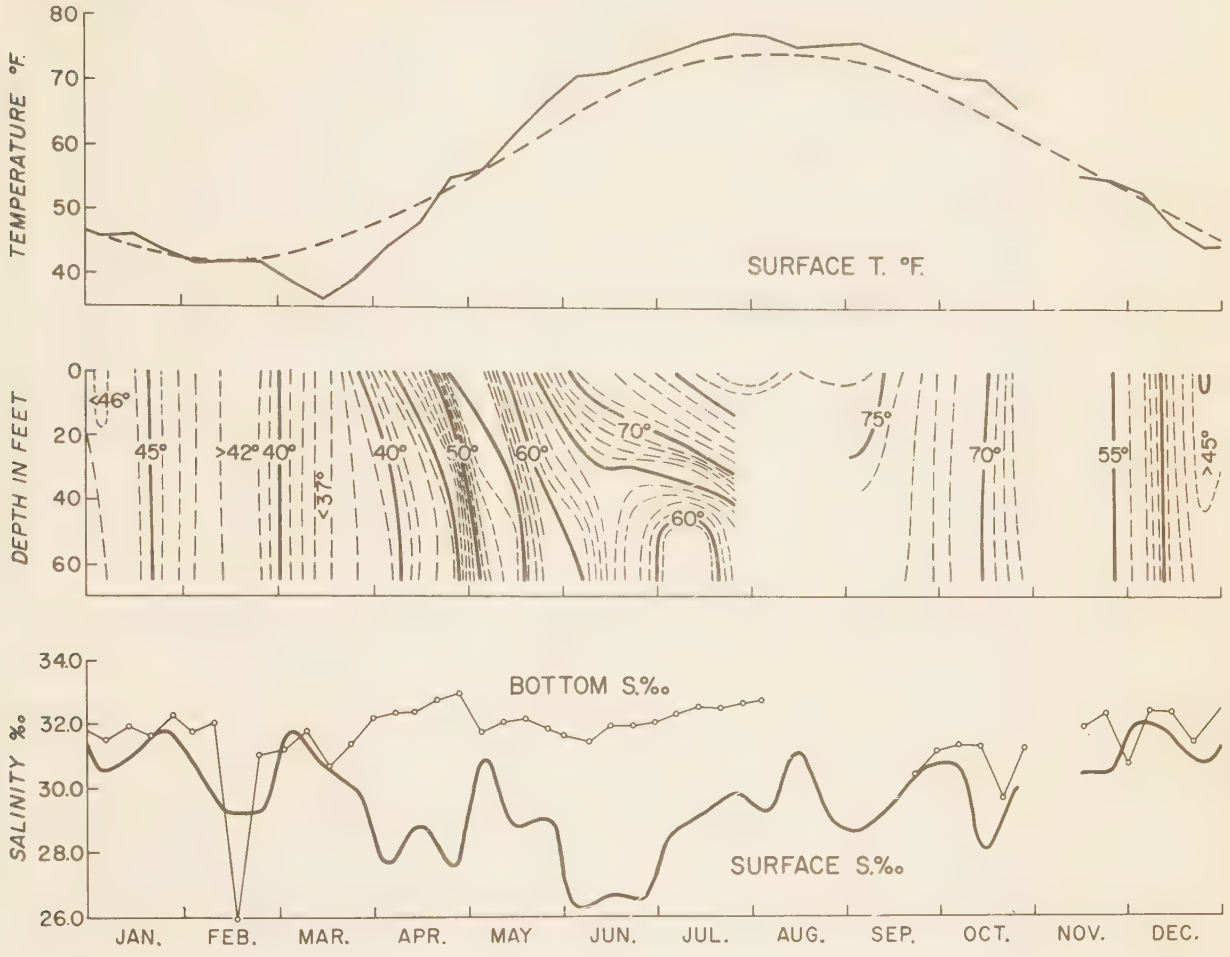

Figure 16.--Chesapeake Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 16.--Chesapeake Lightship: temperature (° F.) and salinity (°/oo), 1960

[36°58' 07" N., 75°42' 02" W.; water depth: 65 feet]

Month and day	Temperature at depth of--				Salinity of depth of--	
	0 ft.	30 ft.	50 ft.	65 ft.	0 ft.	65 ft.
January						
1	46.4	45.7	46.0	46.0	31.82	-
2	46.0	45.8	45.8	45.8	.68	-
3	47.2	46.2	46.0	46.0	.84	-
4	46.5	46.5	46.7	46.6	31.59	-
5	46.0	46.0	47.0	47.1	30.39	-
6	45.5	46.7	47.5	47.7	.71	31.50
7	44.8	46.4	47.8	47.8	30.06	-
8	45.6	46.7	47.8	47.9	29.44	-
9	45.0	47.7	47.8	47.9	26.81	-
10	45.0	47.3	48.0	48.0	-	-
11	45.6	47.7	47.8	47.8	29.44	-
12	46.0	46.6	46.6	46.7	31.88	-
13	46.4	46.9	46.9	46.9	29.97	31.97
14	46.8	46.7	46.7	46.7	32.19	-
15	47.0	46.9	46.9	46.9	.13	-
16	46.8	46.6	46.6	46.6	32.02	-
17	46.2	46.2	46.4	46.8	29.95	-
18	46.2	46.7	47.0	47.0	30.12	-
19	46.1	46.2	46.7	46.9	31.58	-
20	45.0	45.1	45.2	45.2	.55	31.66
21	46.0	45.9	45.9	45.9	31.55	-
22	44.4	44.4	44.4	44.4	32.22	-
23	43.6	43.7	43.7	43.8	32.35	-
24	43.0	43.0	43.0	43.1	-	-
25	43.3	43.0	43.0	43.0	32.26	-
26	42.2	42.5	42.6	42.6	31.54	-
27	43.3	42.9	43.1	43.1	31.83	32.30
28	42.8	43.0	43.3	43.3	29.97	-
29	44.0	43.5	43.2	43.2	32.30	-
30	44.1	44.8	43.7	43.1	32.43	-
31	-	-	-	-	-	-
Mean	45.2	45.5	45.8	45.8	31.1[illegible]	31.86
March						
1	39.3	39.3	39.3	39.1	31.54	-
2	42.1	42.0	42.0	42.0	31.28	31.22
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	38.9	38.9	38.8	38.8	32.26	-
7	38.9	38.7	38.6	38.6	.23	-
8	38.7	38.6	38.5	38.5	32.12	-
9	37.9	37.9	37.9	37.9	31.83	31.80
10	36.8	36.8	36.9	37.0	.49	-
11	37.0	36.9	36.8	36.8	.34	-
12	36.3	36.2	36.1	36.1	.25	-
13	36.2	36.2	36.2	36.2	31.11	-
14	36.2	36.0	36.0	36.0	30.92	-
15	36.3	36.1	36.0	36.0	.91	-
16	35.7	35.6	35.6	35.7	.67	30.70
17	36.4	36.1	35.8	36.0	.45	-
18	35.1	35.1	35.1	35.1	30.21	-
19	35.9	35.7	35.7	35.8	29.94	-
20	36.8	36.4	36.3	36.3	30.11	-
21	37.3	36.8	36.5	36.6	.27	-
22	36.9	36.8	37.1	37.1	30.55	-
23	37.8	37.1	37.2	37.2	31.14	31.40
24	38.1	37.4	37.4	37.5	28.18	-
25	38.0	38.0	37.9	37.9	31.58	-
26	38.9	37.9	38.1	38.1	31.27	-
27	40.7	38.1	38.1	38.1	30.71	-
28	39.0	38.3	38.3	38.3	29.18	-
29	42.9	38.8	38.9	38.9	29.98	-
30	42.6	39.0	39.1	39.1	27.47	32.20
31	41.9	39.1	39.1	39.1	28.75	-
Mean	38.2	37.5	37.5	37.5	30.67	31.46

Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	65 ft.	0 ft.	65 ft.
February						
1	42.9	42.6	42.7	42.7	32.28	-
2	41.8	41.8	41.9	41.9	31.97	-
3	41.4	41.1	41.1	41.0	.93	31.77
4	40.8	40.3	40.3	40.3	.62	-
5	42.1	41.0	41.0	41.0	.62	-
6	41.7	41.3	41.2	41.2	.50	-
7	41.9	41.6	41.6	41.7	31.58	-
8	41.1	41.6	41.8	-	30.44	-
9	42.8	42.1	42.3	42.2	26.18	-
10	42.6	42.1	42.1	42.1	26.08	32.04
11	43.6	42.8	42.7	42.9	31.09	-
12	43.3	42.9	42.9	42.8	.23	-
13	40.3	40.2	40.2	40.2	.22	-
14	42.7	42.4	42.5	42.5	31.[illegible]	-
15	43.2	43.1	43.6	43.8	28.87	-
16	-	-	-	-	24.34	-
17	-	-	-	-	26.11	25.96
18	41.2	41.8	42.1	42.1	31.58	-
19	-	-	-	-	-	-
20	41.2	41.2	41.8	41.8	27.03	-
21	41.0	41.3	42.6	42.6	26.74	-
22	-	-	-	-	26.39	-
23	41.3	41.2	41.1	41.1	30.89	-
24	41.8	41.3	41.2	41.2	30.97	31.08
25	-	-	-	-	-	-
26	42.1	41.7	41.7	41.7	31.00	-
27	42.2	42.2	42.2	42.2	31.02	-
28	42.7	42.4	42.3	43.4	28.45	-
29	42.8	42.8	42.9	42.9	29.31	-
Mean	42.0	41.8	41.9	41.9	29.72	30.21
April						
1	42.5	37.3	37.2	37.2	28.88	-
2	42.9	37.6	37.5	37.4	29.03	-
3	44.0	39.7	38.2	37.9	29.29	-
4	44.4	39.9	39.2	39.2	27.89	-
5	43.9	38.3	38.4	38.2	29.02	-
6	43.5	39.1	39.1	39.2	29.88	-
7	44.9	38.4	38.3	38.3	23.25	32.35
8	45.1	40.8	39.9	39.9	22.91	-
9	47.6	42.9	40.1	40.1	25.80	-
10	44.3	44.0	40.8	40.7	31.02	-
11	43.7	42.8	42.5	42.5	31.55	-
12	45.8	43.2	42.7	41.9	27.79	-
13	46.1	41.9	40.8	40.8	29.26	32.38
14	49.0	42.0	41.0	41.0	25.92	-
15	48.9	42.8	42.1	42.0	28.32	-
16	48.9	42.9	42.0	42.0	29.80	-
17	48.5	42.2	42.0	41.9	28.32	-
18	47.2	42.9	42.7	42.6	29.72	-
19	50.0	43.2	42.2	42.1	28.58	-
20	49.6	43.2	42.8	42.8	28.80	32.78
21	52.3	43.2	42.9	42.9	24.39	-
22	54.2	43.2	42.8	42.8	25.98	-
23	54.0	44.0	43.0	43.0	27.04	-
24	56.0	43.5	43.1	43.0	25.49	-
25	56.6	43.5	43.0	43.0	26.06	-
26	56.0	43.5	43.0	43.0	27.71	-
27	56.1	43.0	43.0	43.0	27.79	32.95
28	-	-	-	-	30.25	-
29	55.6	54.4	48.0	46.2	.42	-
30	55.1	52.6	47.0	46.2	30.78	-
Mean	48.9	42.6	41.6	41.4	28.03	32.62

Table 16.--Chesapeake Lightship: temperature (° F.) and salinity (°/oo),1960--Continued

[36°58' 07" N., 75°42' 02" W.; water depth: 65 feet]

Month and day	Temperature at depth of				Salinity of depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	65 ft.	0 ft.	65 ft.		0 ft.	30 ft.	50 ft.	65 ft.	0 ft.	65 ft.
May							June						
1	56.5	54.8	47.3	47.0	27.75	-	1	69.4	64.8	62.8	62.7	29.60	31.62
2	54.1	53.7	49.0	48.0	30.98	-	2	70.9	64.5	62.0	60.2	21.36	-
3	54.9	54.3	52.2	48.6	31.25	-	3	70.9	63.6	60.9	60.0	25.24	-
4	54.6	54.1	50.7	48.8	.33	31.76	4	71.0	66.0	59.3	59.1	24.08	-
5	54.7	53.8	52.9	49.9	.56	-	5	70.8	62.0	58.6	58.0	25.35	-
6	55.4	54.3	53.3	51.0	.52	-	6	73.6	62.0	58.1	58.0	23.40	-
7	55.7	54.4	52.7	51.5	.60	-	7	72.2	59.6	53.8	53.8	27.55	-
8	56.5	54.8	54.1	53.0	.73	-	8	71.1	62.6	61.7	61.5	27.56	31.48
9	58.0	55.7	55.3	55.1	30.83	-	9	69.5	69.0	64.3	63.9	28.43	-
10	60.2	54.9	54.4	54.1	29.90	-	10	-	-	-	-	29.83	-
11	60.0	54.3	53.8	53.7	28.28	32.06	11	66.7	65.8	65.1	65.0	31.54	-
12	60.4	54.5	54.0	54.0	28.46	-	12	70.8	66.4	65.1	65.0	27.04	-
13	61.7	54.6	53.9	53.9	29.52	-	13	71.0	65.1	64.9	64.9	29.44	-
14	60.6	54.1	53.7	53.3	29.83	-	14	71.0	65.6	64.7	64.7	22.85	-
15	60.6	56.1	52.9	52.9	30.13	-	15	71.0	64.1	64.1	64.1	22.85	31.94
16	61.5	53.0	52.8	52.8	28.63	-	16	74.0	65.0	64.3	64.2	25.72	-
17	62.6	53.4	53.0	52.9	26.37	-	17	73.2	64.5	64.1	64.0	24.75	-
18	65.4	56.7	53.2	53.0	25.00	32.19	18	72.7	65.0	64.0	64.0	26.22	-
19	63.0	61.2	54.3	54.1	30.96	-	19	73.1	64.8	64.5	64.5	28.14	-
20	63.5	58.9	55.6	55.0	31.01	-	20	71.7	64.6	63.5	61.8	27.93	-
21	67.4	59.9	55.9	55.1	24.85	-	21	71.1	64.6	64.1	63.9	29.69	-
22	65.1	61.4	55.8	55.7	29.88	-	22	71.0	67.8	64.3	64.2	30.26	31.96
23	66.3	61.0	56.6	56.2	29.89	-	23	73.2	64.2	63.8	63.7	26.71	-
24	66.66	60.0	57.2	56.8	30.51	-	24	72.0	64.6	62.7	62.6	24.38	-
25	67.4	59.3	57.0	56.9	30.27	31.87	25	72.2	63.8	62.9	62.6	27.38	-
26	67.5	59.4	57.5	57.2	31.43	-	26	73.0	63.8	61.5	61.3	26.20	-
27	66.4	61.5	58.7	57.9	31.07	-	27	75.0	65.0	61.3	60.4	23.00	-
28	67.0	64.5	59.9	59.1	27.84	-	28	75.1	64.0	60.4	59.9	24.06	-
29	67.9	64.2	63.7	62.0	26.22	-	29	75.2	64.5	61.6	60.8	26.19	32.06
30	66.5	64.2	64.3	64.0	31.54	-	30	75.0	67.1	60.5	60.4	27.20	-
31	68.2	63.6	63.3	63.2	26.13	-							
Mean	61.8	57.4	55.1	54.4	29.59	31.97	Mean	72.0	64.6	62.7	62.0	26.46	31.81
July							August						
1	76.4	62.0	59.8	58.2	26.20	-	1	74				-	-
2	73.9	70.2	60.9	60.1	26.28	-	2	77				-	-
3	75.5	70.0	57.0	56.3	28.56	-	3	77				28.02	32.75
4	75.9	68.0	60.2	60.1	29.60	-	4	78				29.38	-
5	74.3	64.0	58.3	57.8	30.04	-	5	78				-	-
6	74.3	65.0	58.2	57.8	30.37	32.32	6	78				28.30	-
7	74.9	61.2	57.9	57.8	29.99	-	7	77				-	-
8	75.2	59.1	58.1	58.1	30.60	-	8	80				30.62	-
9	75.0	64.0	57.8	57.6	28.58	-	9	77				29.50	-
10	73.2	69.0	58.8	58.0	26.44	-	10	80				29.54	-
11	73.2	59.5	59.1	59.0	26.94	-	11	76				-	-
12	77.9	60.3	57.8	57.7	30.44	-	12	75				31.34	-
13	77.1	60.3	57.4	57.2	30.43	32.52	13	78				.54	-
14	76.8	61.2	58.4	57.2	26.59	-	14	79				.59	-
15	76.5	67.0	57.9	57.8	30.77	-	15	79				.25	-
16	77.0	72.5	58.7	58.0	.98	-	16	77				.24	-
17	76.3	72.0	59.1	58.9	30.87	-	17	74				.45	-
18	76.2	65.5	60.0	58.8	29.28	-	18	72				.22	-
19	77.8	72.5	59.0	58.6	28.61	-	19	74				31.08	-
20	78.0	71.3	60.3	59.5	27.18	32.50	20	75				29.17	-
21	78.8	62.5	59.5	59.3	30.17	-	21	78				26.95	-
22	78.6	65.0	60.0	59.9	29.41	-	22	78				27.79	-
23	78.0	65.5	60.9	60.8	23.97	-	23	77.0	74.0	74.0	74.0	27.00	-
24	80.0	70.1	61.6	61.5	26.71	-	24	76.0	75.0	74.0	74.1	29.43	-
25	80.2	71.2	60.4	60.4	29.85	-	25	70				31.04	-
26	78.8	74.4	60.7	60.4	30.61	-	26	74.1	74.0	74.0	74.0	.36	-
27	79.2	77.2	62.0	61.5	30.14	32.67	27	75				.33	-
28	78.9	74.8	63.8	63.0	32.07	-	28	75				.37	-
29	78.7	78.3	63.9	62.3	32.43	-	29	77				31.19	-
30	73.0	73.6	71.2	68.1	31.81	-	30	78.9	74.9	74.4	74.4	26.07	-
31	73.1	73.0	72.9	67.5	31.03	-	31	79				25.68	-
Mean	76.5	67.8	60.4	59.7	29.26	32.50	Mean	76.5	-	-	-	29.79	-

Table 16.--Chesapeak Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[36°58' 07" N., 75°42' 02" W.; water depth: 65 feet]

Month and day	Temperature at depth of--				Salinity of depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	65 ft.	0 ft.	65 ft.		0 ft.	30 ft.	50 ft.	65 ft.	0 ft.	65 ft.
September							October						
1	76.8	74.5	74.1	74.1	28.82	-	1	71.9	72.1	72.0	72.0	30.89	-
2	77.3	74.6	74.1	74.1	28.00	-	2	72.9	71.3	71.2	71.2	31.06	-
3	78.2	74.2	74.0	73.9	27.83	-	3	73.0	71.7	71.4	71.4	29.08	-
4	77.2	74.0	74.0	74.0	28.32	-	4	71.0	71.0	71.0	71.0	31.05	-
5	75.6	74.0	73.9	73.6	29.30	-	5	70.8	70.8	-	-	31.29	-
6	76.0	74.8	72.8	72.7	.54	-	6	71.2	70.5	70.2	-	30.10	31.36
7	75.7	75.4	73.2	73.2	29.77	-	7	71.0	70.4	70.4	70.4	30.42	-
8	75.2	74.1	73.0	73.0	30.03	-	8	70.2	70.1	70.4	70.4	31.26	-
9	76.9	74.9	73.2	73.1	28.36	-	9	69.5	69.5	69.6	69.6	.28	-
10	76.3	75.0	72.9	72.8	26.54	-	10	69.5	69.7	69.7	69.7	31.30	-
11	76.9	73.1	72.2	71.0	27.41	-	11	70.0	69.5	69.5	69.5	30.97	-
12	-	-	-	-	-	-	12	70.7	70.5	70.2	70.2	28.15	-
13	75.0	74.2	74.3	74.4	29.61	-	13	70.1	69.9	69.1	69.0	28.25	31.32
14	75.0	73.5	73.7	73.7	30.06	-	14	70.4	69.9	69.1	69.1	26.80	-
15	73.6	73.2	73.2	73.2	29.61	-	15	72.4	70.0	69.2	69.0	27.59	-
16	74.1	73.8	73.7	73.7	29.70	-	16	71.7	70.5	69.6	69.2	26.27	-
17	73.0	73.0	73.1	73.1	30.12	-	17	70.9	70.2	69.5	69.0	28.15	-
18	72.8	72.7	72.7	72.7	29.93	-	18	-	-	-	-	27.76	-
19	-	-	-	-	30.00	30.00	19	70.8	69.7	69.5	69.5	27.79	-
20	76.1	74.5	73.4	-	28.52	-	20	69.9	69.2	69.1	69.1	29.03	29.66
21	74.0	74.0	73.8	-	30.90	-	21	67.1	67.1	67.1	67.1	29.72	-
22	73.9	73.8	74.1	74.1	.37	30.42	22	67.2	67.9	68.5	-	30.12	-
23	73.8	73.7	-	-	.88	-	23	67.5	67.6	67.6	67.6	.21	-
24	73.5	73.5	73.5	73.4	.85	-	24	67.5	67.7	67.7	67.7	.21	-
25	73.3	73.5	73.5	73.5	30.90	-	25	67.0	67.0	67.0	-	30.39	-
26	72.6	72.9	73.0	73.0	31.04	-	26	65.0	65.5	-	-	29.39	-
27	72.6	72.7	72.6	72.6	30.99	-	27	64.4	65.7	66.4	66.6	29.14	31.27
28	71.8	71.7	71.5	71.5	31.08	-	28	-	-	-	-	-	-
29	71.0	71.0	70.8	-	31.09	31.14	29	-	-	-	-	-	-
30	71.8	71.1	71.2	71.2	27.86	-	30	-	-	-	-	-	-
								-	-	-	-	31.28	-
Mean	74.6	73.6	73.2	73.2	29.57	-	Mean	69.8	69.4	69.4	69.4	29.61	30.90
November							December						
1	-	-	-	-	-	-	1	55.3	55.5	55.6	-	31.71	-
2	-	-	-	-	-	-	2	54.3	55.0	55.0	55.0	32.11	-
3	-	-	-	-	-	-	3	55.0	55.0	55.0	55.1	.48	-
4	-	-	-	-	-	-	4	54.7	54.7	54.8	54.8	.40	-
5	-	-	-	-	-	-	5	54.0	54.0	54.1	54.1	.47	-
6	-	-	-	-	-	-	6	53.9	53.8	53.8	53.8	.49	-
7	-	-	-	-	-	-	7	53.6	53.2	53.8	53.8	.31	32.43
8	-	-	-	-	-	-	8	54.0	53.3	53.3	53.2	.83	-
9	-	-	-	-	-	-	9	47.5	51.7	52.0	52.0	32.58	-
10	-	-	-	-	-	-	10	48.3	51.8	52.0	52.0	29.06	-
11	-	-	-	-	-	-	11	51.0	51.2	52.2	52.2	29.69	-
12	-	-	-	-	-	-	12	-	-	-	-	-	-
13	56.1	56.0	56.0	56.0	31.60	-	13	-	-	-	-	-	-
14	56.0	55.7	55.8	55.8	.65	-	14	-	-	-	-	32.29	32.38
15	56.0	55.1	55.1	55.1	31.58	-	15	46.0	48.1	49.1	49.1	30.42	-
16	55.1	55.5	56.0	56.0	27.94	31.91	16	48.0	48.1	48.1	48.1	32.45	-
17	56.4	55.9	55.8	55.8	29.80	-	17	47.3	47.3	47.6	-	30.91	-
18	55.2	56.0	56.0	56.0	28.90	-	18	47.2	47.1	47.8	47.9	32.23	-
19	56.0	56.0	56.0	56.0	30.01	-	19	47.6	47.8	47.8	47.9	32.81	-
20	55.9	55.6	55.6	55.7	31.89	-	20	47.5	47.5	47.5	47.5	31.41	-
21	55.8	55.7	55.8	55.8	.94	-	21	47.5	47.7	47.8	47.8	29.41	31.43
22	55.2	55.2	55.3	55.3	31.75	-	22	46.5	46.6	46.6	46.7	33.16	-
23	55.1	55.9	56.0	56.0	29.86	32.32	23	44.5	44.7	46.0	46.0	29.19	-
24	55.5	55.5	55.4	55.3	32.21	-	24	45.4	45.6	45.7	45.7	32.02	-
25	55.0	55.0	55.0	55.0	.16	-	25	43.1	45.8	45.9	45.9	32.11	-
26	55.7	54.9	54.9	54.9	32.23	-	26	41.0	46.0	46.1	46.1	24.84	-
27	53.9	55.0	55.1	55.1	28.66	-	27	44.1	45.4	46.1	46.2	31.68	-
28	55.0	55.1	55.1	55.1	27.19	-	28	45.0	45.0	45.1	45.1	28.77	-
29	58.0	55.5	55.6	55.7	28.53	-	29	45.7	45.7	45.8	45.9	33.01	-
30	54.9	54.9	55.2	55.3	30.71	30.74	30	45.5	45.8	46.1	46.1	31.84	-
							31	44.4	45.9	45.9	45.9	32.19	-
Mean	-	-	-	-	-	-	Mean	48.5	49.3	49.5	49.4	31.41	-

Diamond Shoals Lightship (fig. 17, table 17)--Because of the complicated thermal structure at Diamond Shoals, marked by rapid changes, the profile of temperature is contoured for every 5° F.

The low surface water temperatures in March, which represents the passage of coastal water southward over the Shoals, has occurred every other year during the winter months since 1956 when these observations began; in 1957 and 1959 no such breach of the temperature barrier appeared. The remainder of the year showed no marked deviation from the mean for this station. The relatively cold November and warm December is a reversal of the trend at positions further to the north. The bottom temperature maximum, 77.8° in early October, is the highest for the period 1956-60. Wide salinity fluctuations as shown in the figure are normal here.

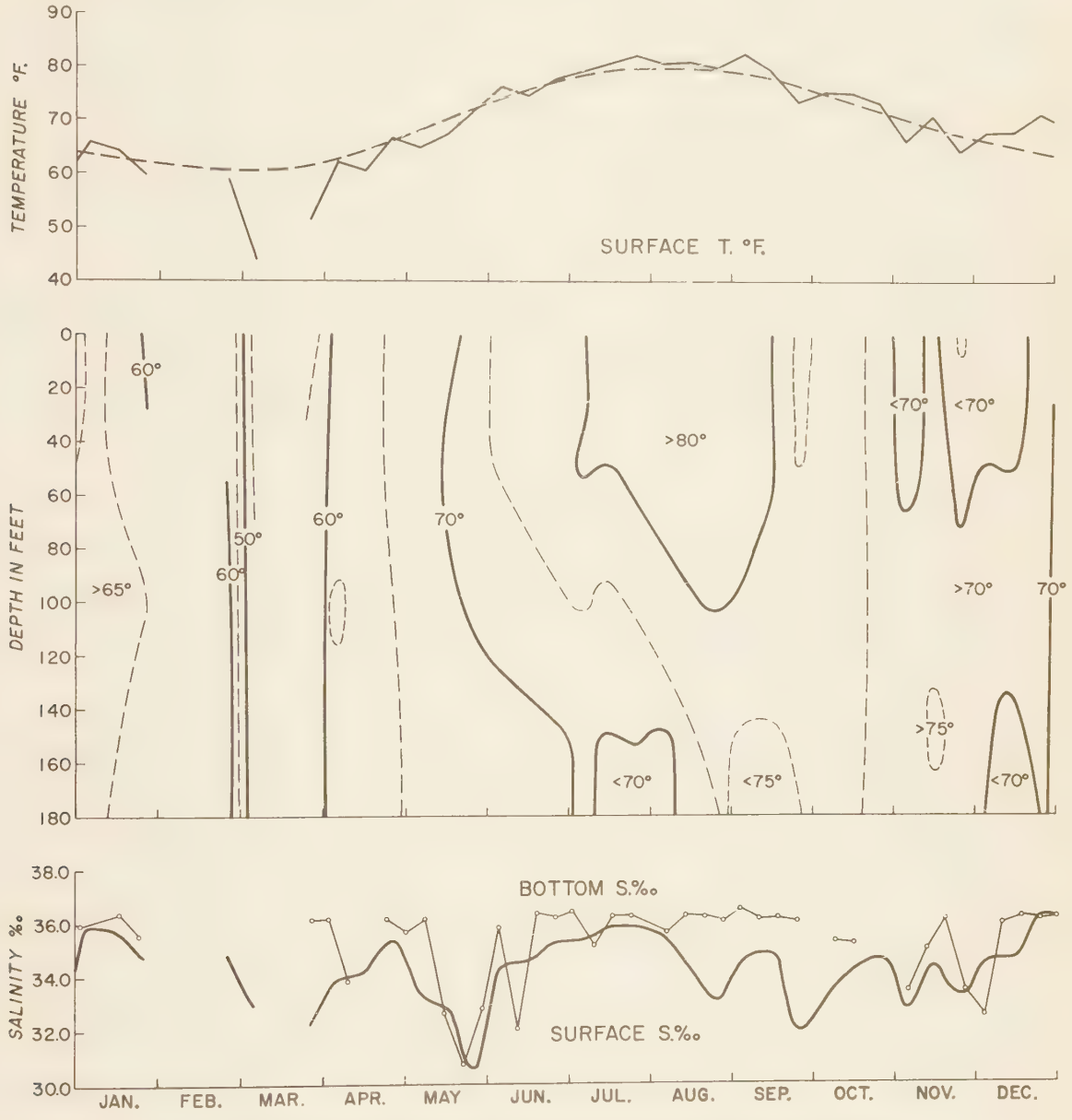

Figure 17.--Diamond Shoals Lightship. (Dashed line in upper diagram mean for period 1923-56.)

Table 17.--Diamond Shoals lightship: temperature (° F.) and salinity (°/oo), 1960

[35°05' 30" N., 75°19' 30" W.; water depth: 200 feet]

Month and day	Temperature at depth of--						Salinity at depth of	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
January								
1	71.2	71.5	71.7	71.4	69.1	68.1	36.44	-
2	-	-	-	-	-	-	36.43	35.96
3	-	-	-	-	-	-	-	-
4	69.8	69.3	69.3	69.2	69.1	69.0	-	-
5	68.8	68.8	68.9	68.9	68.9	67.2	36.40	-
6	66.3	66.5	66.3	65.5	65.2	65.2	36.33	-
7	-	-	-	-	-	-	-	-
8	66.3	66.8	66.5	65.8	65.4	65.3	36.24	-
9	59.0	59.5	60.8	66.7	66.8	65.7	34.72	-
10	59.1	59.2	61.2	66.6	66.5	65.6	.71	-
11	59.3	59.7	61.4	67.0	66.8	65.9	34.71	-
12	62.9	62.9	63.6	64.8	65.1	65.2	35.22	-
13	-	-	-	-	-	-	-	-
14	63.9	63.9	64.0	65.0	65.9	66.1	35.23	-
15	65.0	65.6	65.2	65.7	64.3	62.9	-	-
16	-	-	-	-	-	-	36.37	36.38
17	-	-	-	-	-	-	-	-
18	68.1	67.3	67.0	66.9	64.8	62.8	36.38	-
19	-	-	-	-	-	-	-	-
20	67.0	67.3	66.6	66.0	63.8	62.0	36.38	-
21	-	-	-	-	-	-	-	-
22	57.8	57.9	58.2	57.1	58.6	59.1	34.81	-
23	53.8	53.8	57.0	63.5	63.8	64.4	33.56	35.56
24	48.8	50.0	53.5	65.6	65.0	65.8	32.16	-
25	48.2	49.9	54.5	65.5	63.0	65.8	32.16	-
26	66.9	66.9	66.9	66.9	66.9	66.1	36.20	-
27	69.2	69.2	69.2	69.2	67.9	66.8	.39	-
28	68.9	68.9	68.9	68.9	67.1	65.9	.36	-
29	65.2	65.2	65.2	65.1	64.0	63.9	36.15	-
30	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-
Mean	63.1	63.3	64.1	66.3	65.6	65.2	35.40	-

Month and day	Temperature at depth of--						Salintiy at depth of	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
February								
1	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-
3	45.5	46.3	48.3	47.0	49.1	47.2	32.24	-
4	44.8	45.9	50.2	57.9	55.3	57.2	31.93	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
7	52.8	57.0	60.0	65.9	65.8	65.8	33.26	-
8	-	-	-	-	-	-	33.12	-
9	52.9	66.1	67.9	67.9	66.2	65.8	32.18	-
10	51.9	62.9	67.9	67.9	66.2	65.9	32.14	-
11	-	-	-	-	-	-	-	-
12	62.8	62.9	62.8	62.1	62.0	62.0	35.61	-
13	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-
15	58.8	62.2	63.0	63.1	63.6	63.8	34.90	-
16	-	65.3	65.2	63.8	61.8	61.7	36.04	-
17	63.5	63.0	63.0	62.9	62.5	62.7	36.35	-
18	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-
21	66.2	66.2	66.2	65.7	64.1	63.2	36.31	-
22	66.0	66.0	66.0	65.2	64.0	63.0	.29	-
23	64.9	64.5	62.1	61.8	62.0	62.0	36.36	-
24	58.2	59.1	59.5	59.0	58.3	58.8	35.16	-
25	-	-	-	-	-	-	-	-
26	54.1	55.2	58.0	60.6	63.9	62.7	33.61	-
27	-	-	-	-	-	-	-	-
28	51.9	51.6	51.7	59.0	61.0	61.1	33.17	-
29	53.0	53.0	53.1	59.6	62.5	62.5	33.16	-
Mean	-	-	-	-	-	-	-	-

Month and day	Temperature at depth of--						Salinity at depth of	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
March								
1	53.2	53.2	53.4	54.7	55.7	55.7	34.36	-
2	53.5	53.5	53.6	55.0	55.3	55.7	34.33	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	37.9	37.8	38.0	38.0	38.2	38.2	32.92	-
7	43.1	42.9	43.0	43.1	43.3	43.3	33.13	-
8	40.9	40.9	41.0	41.5	41.5	41.8	31.76	-
9	40.0	40.0	40.0	40.3	40.5	40.9	31.93	-
10	40.9	41.2	42.2	53.6	54.7	55.5	32.31	-
11	-	-	-	-	-	-	31.72	-
12	-	-	-	-	-	-	-	-
13	38.8	38.8	38.9	38.9	38.3	38.2	33.23	-
14	39.1	39.1	39.1	39.2	39.2	39.2	-	-
15	38.7	38.7	38.8	39.0	39.2	39.9	33.04	-
16	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	30.43	-
21	46.7	46.7	47.4	-	-	-	32.49	-
22	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	32.08	-
24	56.6	62.8	64.8	66.1	66.1	-	33.45	-
25	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	32.68	36.17
27	51.0	58.1	61.3	64.9	64.8	64.8	32.57	-
28	51.0	57.8	58.8	63.9	63.5	63.2	31.34	-
29	52.0	53.0	60.0	63.2	63.1	62.0	31.39	-
30	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-	-

Month and day	Temperature at depth of--						Salinity at depth of	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
April								
1	59.0	62.0	65.0	65.6	63.8	63.8	33.63	-
2	59.3	60.2	62.9	65.0	63.3	62.5	33.76	36.18
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	69.8	70.0	70.1	69.3	66.4	65.7	35.34	-
6	64.4	64.6	65.0	66.9	66.4	64.5	-	-
7	-	-	-	-	-	-	-	-
8	61.1	62.6	62.7	64.4	62.0	60.1	34.58	-
9	60.1	61.4	61.7	64.2	65.8	63.2	32.42	33.84
10	-	-	-	-	-	-	-	-
11	50.1	50.4	53.1	60.7	60.2	61.0	32.46	-
12	-	-	-	-	-	-	-	-
13	55.3	59.0	59.8	64.1	65.3	64.4	33.22	-
14	60.5	64.2	64.7	64.1	63.8	63.8	33.78	-
15	61.0	63.0	62.8	62.2	62.2	62.0	35.21	-
16	62.9	62.3	62.0	61.2	61.0	61.0	-	-
17	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-
20	74.5	75.0	75.0	74.1	70.1	-	36.50	-
21	73.9	73.9	73.6	70.1	68.6	-	.39	-
22	70.2	70.3	70.2	68.8	65.8	-	.18	-
23	72.0	70.5	69.9	66.9	63.8	-	.27	36.16
24	70.9	70.8	70.5	-	-	-	.23	-
25	68.2	68.1	67.8	65.1	63.2	-	.08	-
26	-	-	-	-	-	-	36.00	-
27	67.2	66.2	66.1	64.4	64.0	-	35.79	-
28	-	-	-	-	-	-	-	-
29	58.6	58.7	61.1	63.6	64.1	64.1	33.47	-
30	54.5	51.9	51.3	52.1	63.7	66.2	32.11	35.68
Mean	-	-	-	-	-	-	34.71	35.46

Table 17.--Diamond Shoals Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[35°05' 30" N., 75°19' 30" W.; water depth: 200 feet]

Month and day	Temperature at depth of--						Salinity at depth of	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
May								
1	55.0	55.8	60.5	67.1	67.2	67.2	32.18	-
2	59.0	59.0	59.5	62.1	65.1	66.1	31.13	-
3	75.5	73.7	70.2	67.3	67.1	66.2	30.23	-
4	72.0	71.4	69.9	66.2	66.0	66.2	30.22	-
5	69.0	68.2	68.0	65.8	64.1	63.9	-	-
6	71.2	71.2	70.9	67.1	65.5	64.7	30.11	-
7	71.9	71.9	70.8	68.4	66.2	64.1	30.11	36.11
8	58.0	60.0	67.6	67.1	65.4	65.4	31.19	-
9	59.5	58.2	63.0	70.2	66.3	-	29.47	-
10	60.2	63.3	65.2	69.7	67.0	64.1	31.23	-
11	69.6	66.2	67.1	67.1	65.2	65.1	32.32	-
12	-	-	-	-	-	-	-	-
13	66.6	70.9	71.2	69.8	-	-	32.21	-
14	66.9	73.0	76.1	70.3	68.9	65.1	32.48	34.42
15	69.6	71.9	71.9	69.2	65.4	64.2	33.13	-
16	69.1	75.1	73.6	68.9	-	-	34.14	-
17	70.3	69.6	69.3	67.3	61.2	-	35.34	-
18	68.1	69.2	68.8	68.4	68.0	-	31.99	-
19	68.2	68.2	68.8	67.1	64.3	64.0	32.84	-
20	65.6	68.0	70.2	67.5	68.0	69.0	30.21	-
21	-	75.2	75.3	70.2	67.7	64.1	30.11	34.17
22	69.6	68.2	68.6	68.2	68.2	67.7	31.32	-
23	-	-	-	-	-	-	34.46	-
24	-	-	-	-	-	-	33.46	-
25	71.2	72.6	71.5	72.5	-	-	32.93	-
26	72.2	72.0	73.0	-	-	-	31.17	-
27	72.3	72.5	71.1	-	-	-	30.14	-
28	71.9	73.2	73.9	71.5	68.7	-	32.42	34.81
29	72.6	72.0	72.5	72.5	72.2	-	31.10	-
30	72.6	73.5	73.7	73.2	71.3	-	33.03	-
31	-	-	-	-	-	-	31.34	-
Mean	67.9	69.3	69.9	68.6	-	-	32.16	35.09
June								
1	77.4	78.3	76.2	73.2	68.0	-	33.60	-
2	77.3	77.1	75.5	72.3	68.2	-	35.95	-
3	74.2	74.1	76.3	69.1	67.8	-	33.31	-
4	76.5	76.1	74.3	69.5	69.1	69.1	31.52	35.85
5	77.4	77.2	77.0	74.3	69.7	-	35.04	-
6	79.1	77.1	77.1	73.2	68.5	67.3	.80	-
7	77.5	77.1	77.2	75.0	70.3	68.1	35.02	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-
11	77.0	78.2	74.3	68.2	70.9	73.3	30.94	32.04
12	75.2	76.1	76.2	73.3	72.5	72.5	34.05	-
13	73.7	76.1	75.1	74.0	72.6	72.6	34.02	-
14	76.1	76.1	73.9	71.9	69.0	68.8	35.78	-
15	74.3	76.1	75.4	71.4	68.1	68.1	.78	-
16	76.2	76.1	76.2	76.3	67.0	65.0	.34	-
17	74.4	76.1	73.6	69.9	67.5	67.3	.12	-
18	76.4	76.1	74.4	70.2	66.7	65.1	35.34	36.32
19	77.4	77.0	76.9	71.9	67.7	65.2	34.74	-
20	77.3	77.1	76.2	71.6	67.5	65.7	.74	-
21	77.3	77.1	75.9	74.0	71.3	66.2	.86	-
22	77.1	77.1	75.1	74.0	71.2	68.9	34.90	-
23	77.4	77.4	76.3	72.4	68.4	66.2	35.00	-
24	77.3	77.2	76.3	72.7	66.4	66.2	.00	-
25	78.5	78.2	77.1	72.6	66.0	64.8	.07	36.20
26	77.2	77.2	77.2	72.3	65.4	64.9	35.22	-
27	-	-	-	-	-	-	-	-
28	74.1	80.1	80.5	79.3	71.8	71.2	35.42	-
29	72.6	79.2	79.1	72.3	68.4	67.5	36.06	-
30	74.7	80.6	80.9	75.6	71.8	71.0	35.80	-
Mean	76.7	76.7	76.2	72.3	68.9	-	34.75	35.10
July								
1	80.6	80.9	80.9	80.0	71.8	68.3	35.69	-
2	78.1	78.2	78.7	73.6	69.2	69.2	.12	36.41
3	80.5	80.2	80.3	79.8	76.0	72.3	.41	-
4	80.8	81.5	81.5	75.9	73.1	72.8	.06	-
5	80.9	81.0	81.0	80.0	72.9	69.3	.54	-
6	79.7	79.4	79.9	79.4	74.6	71.3	.09	-
7	79.6	79.3	79.9	75.7	74.6	71.6	.14	-
8	79.8	79.2	79.9	75.6	74.1	71.5	.11	-
9	79.2	79.2	79.9	75.5	74.1	71.5	.14	36.14
10	79.5	79.2	79.9	75.5	74.1	71.5	.22	-
11	80.0	79.9	78.5	75.0	72.8	70.7	.24	-
12	80.0	79.1	79.1	75.0	72.9	72.9	.24	-
13	79.8	78.9	78.9	75.0	72.7	-	35.89	-
14	82.5	82.2	78.3	71.2	68.8	67.8	36.14	-
15	82.5	81.5	78.3	76.0	68.8	67.8	.21	-
16	82.4	81.3	78.5	74.0	68.5	67.8	.21	36.23
17	82.1	82.0	79.5	76.9	68.5	67.8	.21	-
18	82.5	81.1	80.6	69.0	68.1	68.0	.31	-
19	81.8	81.7	80.5	69.1	68.1	68.1	36.31	-
20	80.6	80.1	80.5	71.8	67.1	67.0	31.79	-
21	84.2	81.6	80.0	76.4	72.4	68.1	36.23	-
22	82.7	81.8	79.4	74.2	70.5	69.0	35.99	-
23	81.5	78.5	79.3	73.9	69.5	68.9	.41	36.29
24	84.0	83.5	82.9	80.0	68.4	67.8	.31	-
25	83.6	82.2	82.1	79.9	73.1	67.7	.14	-
26	83.6	82.8	81.3	75.7	69.8	68.6	.16	-
27	82.3	82.3	80.0	72.2	68.2	67.4	.99	-
28	82.5	82.5	82.8	75.0	70.9	70.6	31.93	-
29	81.2	81.9	80.1	75.5	74.1	74.0	34.46	-
30	81.9	81.9	81.9	79.7	79.3	-	36.21	-
31	83.2	83.0	80.5	74.8	68.6	66.8	34.14	-
Mean	81.3	80.9	80.1	75.1	71.4	69.5	35.46	36.24
August								
1	81.1	81.1	80.6	79.7	64.7	63.2	36.25	-
2	80.9	80.1	79.9	76.8	66.9	63.0	36.14	-
3	80.3	80.6	80.1	78.8	67.6	63.0	35.31	-
4	80.7	80.1	81.0	78.1	64.3	62.8	34.40	-
5	81.3	81.1	81.3	77.7	65.5	64.2	35.05	-
6	81.2	81.9	81.3	75.1	67.1	65.1	.57	36.63
7	81.2	80.7	80.6	80.2	75.7	65.9	.69	-
8	82.0	82.0	81.2	78.8	73.5	72.8	.41	-
9	82.4	83.1	81.9	78.8	71.2	69.3	.39	-
10	82.0	81.9	81.8	71.6	68.2	68.2	.62	-
11	80.8	79.4	78.8	76.3	68.7	67.8	.91	-
12	83.1	82.3	82.1	80.0	77.9	76.2	.26	-
13	83.2	82.7	82.2	80.4	74.4	71.3	.04	36.29
14	84.8	82.9	82.7	79.8	71.0	70.1	35.04	-
15	83.6	82.9	82.3	79.0	74.6	70.1	34.87	-
16	83.4	83.3	82.5	78.7	74.7	70.8	35.10	-
17	82.5	82.1	82.1	80.6	79.1	75.8	35.17	-
18	83.3	82.1	81.8	79.4	79.7	-	32.68	-
19	78.7	77.9	78.1	78.2	79.9	79.7	30.99	-
20	84.9	84.1	84.2	83.1	79.7	74.8	31.83	36.21
21	79.9	79.1	79.7	83.8	76.4	75.7	31.86	-
22	83.2	81.6	82.9	81.9	75.8	75.4	32.65	-
23	82.1	82.8	82.8	82.3	83.4	79.2	32.59	-
24	82.1	82.1	82.1	-	-	-	35.94	-
25	84.9	81.9	81.9	82.4	81.8	81.8	33.87	-
26	78.1	77.8	78.4	81.7	82.1	-	31.60	-
27	82.6	77.9	80.1	82.9	82.7	-	31.47	36.05
28	-	-	-	-	-	-	35.25	-
29	82.6	83.2	83.1	82.3	77.9	76.8	33.80	-
30	84.1	83.4	83.3	79.6	76.1	76.9	33.14	-
31	82.3	83.8	83.1	83.2	83.6	72.2	31.96	-
Mean	82.1	81.3	81.6	79.2	75.9	70.7	34.22	36.04

Table 17.--Diamond Shoals Lightship: temperature (° F.) and salinity (‰), 1960--Continued

(35°05' 30" N., 75°19' 30" W.; water depth: 200 feet)

Month and day	Temperature at depth of--						Salinity at depth of	
	0 ft.	30 ft.	50 ft.	100 ft.	150 ft.	180 ft.	0 ft.	180 ft.
September								
1	83.1	83.7	83.6	78.3	74.7	73.2	34.18	-
2	82.3	82.6	83.0	79.9	72.3	71.2	33.72	-
3	-	82.4	82.6	83.0	76.1	72.0	.81	36.51
4	84.0	84.2	84.1	83.3	80.7	79.0	33.28	-
5	83.5	82.9	82.8	73.1	70.8	-	36.09	-
6	82.0	82.6	82.0	75.8	72.2	71.9	36.05	-
7	82.5	82.5	81.6	74.7	72.1	71.4	35.75	-
8	80.0	80.0	80.9	81.0	79.1	73.0	31.86	-
9	85.0	84.1	84.1	81.5	73.9	72.8	35.99	-
10	84.8	84.2	84.1	75.1	72.7	70.0	36.03	36.17
11	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-
13	81.1	80.8	80.8	79.0	72.6	-	35.69	-
14	79.6	79.8	79.7	78.3	70.3	-	35.87	-
15	80.8	80.1	79.2	77.0	76.5	-	36.11	-
16	81.5	81.6	81.7	80.2	76.5	-	.00	-
17	80.9	80.9	80.9	80.8	73.6	-	36.08	36.20
18	-	-	-	-	-	-	33.90	-
19	77.3	78.0	80.2	79.8	76.9	-	33.11	-
20	79.0	80.5	80.3	76.7	74.4	-	31.98	-
21	80.6	81.1	81.2	79.8	78.0	-	35.11	-
22	76.0	76.1	76.0	80.4	79.2	-	32.77	-
23	73.9	73.9	74.0	74.1	77.8	-	32.30	-
24	73.7	73.9	73.5	77.2	81.8	-	31.54	36.07
25	73.8	73.9	73.7	76.0	81.3	-	.54	-
26	72.3	72.2	72.2	72.3	73.8	-	.51	-
27	71.8	71.8	71.4	71.3	71.6	-	.53	-
28	71.9	71.2	72.0	80.6	-	-	3.154	-
29	-	73.1	73.1	75.7	79.4	79.2	30.34	-
30	73.1	73.2	73.3	77.5	79.4	79.7	31.06	-
Mean	79.0	78.9	79.0	77.9	75.7	-	33.74	36.24
October								
1	-	-	-	-	-	-	-	-
2	74.1	75.1	75.0	80.1	79.8	79.9	32.59	-
3	74.0	73.7	76.2	79.7	79.9	-	30.96	-
4	74.0	73.9	75.0	79.8	79.1	78.0	32.29	-
5	73.4	73.7	74.2	80.0	-	-	30.87	-
6	78.2	80.8	80.8	80.3	80.3	80.3	32.44	-
7	77.9	78.0	78.9	79.4	78.2	76.6	35.42	-
8	80.0	80.5	80.6	79.9	78.8	78.0	35.76	35.30
9	76.8	77.0	78.3	78.9	77.4	74.5	-	-
10	75.2	76.9	77.2	77.9	78.0	77.2	35.23	-
11	76.0	76.0	76.6	77.2	77.7	77.8	34.88	-
12	76.9	77.0	77.4	78.9	79.0	75.0	35.84	-
13	79.5	79.3	79.3	78.7	75.3	72.6	.97	-
14	79.4	79.8	79.9	75.7	71.5	70.0	.21	-
15	77.0	77.0	77.5	78.9	79.1	75.5	35.23	35.22
16	76.9	77.0	77.2	78.9	79.2	74.8	-	-
17	72.0	73.0	75.6	77.8	78.1	78.5	32.09	-
18	72.4	74.0	76.0	78.0	78.2	78.7	.09	-
19	73.2	75.0	77.1	79.4	79.1	76.2	32.70	-
20	-	-	-	-	-	-	-	-
21	73.2	74.4	74.7	76.5	78.2	78.1	33.91	-
22	-	-	-	-	-	-	-	-
23	79.7	79.8	79.9	79.9	79.7	78.0	36.06	-
24	78.5	78.7	78.7	74.5	70.7	69.9	35.92	-
25	71.8	72.2	73.0	73.3	73.5	73.3	34.21	-
26	77.2	77.3	76.6	76.8	71.5	68.2	35.93	-
27	76.7	76.8	76.9	76.7	66.1	64.2	35.86	-
28	70.9	71.0	71.0	72.1	72.5	-	33.94	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-
31	63.7	63.7	63.7	66.4	66.4	66.8	31.80	-
Mean	75.3	75.8	76.4	77.5	76.3	74.9	34.05	-
November								
1	64.7	64.2	64.8	76.7	77.1	77.1	31.28	-
2	64.0	64.3	64.8	66.2	72.8	73.1	30.89	-
3	66.0	66.0	66.0	67.5	69.0	69.1	32.22	-
4	65.5	65.5	66.9	69.0	71.0	71.1	32.24	-
5	68.0	77.3	77.8	77.8	78.0	78.2	33.45	33.45
6	69.5	69.7	69.8	70.3	72.1	72.7	34.28	-
7	75.8	76.1	76.1	76.1	74.3	71.8	36.15	-
8	64.8	65.1	65.5	72.1	72.9	72.9	32.19	-
9	65.0	65.2	67.5	71.3	72.9	73.4	32.30	-
10	64.6	64.9	65.9	75.0	76.0	74.6	32.55	-
11	-	-	-	-	-	-	-	-
12	68.9	69.0	71.6	75.0	75.0	75.0	34.11	35.01
13	-	-	-	-	-	-	33.28	-
14	64.9	65.0	65.1	71.4	74.6	74.6	32.75	-
15	65.2	67.3	70.0	74.0	74.7	74.8	.96	-
16	-	-	-	-	-	-	32.29	-
17	76.0	76.6	76.8	76.9	76.0	75.2	36.24	-
18	76.8	77.0	76.9	76.1	76.1	75.8	.15	-
19	75.9	75.9	75.9	76.0	75.6	71.5	36.16	36.14
20	73.0	73.1	73.3	74.0	74.1	74.1	35.64	-
21	65.0	66.0	68.8	72.2	72.9	73.1	33.60	-
22	68.6	74.1	75.0	75.5	-	-	33.65	-
23	62.1	68.0	72.0	73.0	71.4	68.2	32.26	-
24	-	-	-	-	-	-	33.49	-
25	67.1	67.5	68.0	71.7	73.8	73.2	34.23	-
26	64.1	65.6	68.3	69.9	73.6	72.5	33.39	33.45
27	-	-	-	-	-	-	33.43	-
28	61.6	66.0	67.9	72.1	74.0	72.5	32.01	-
29	64.6	65.4	65.6	72.1	74.0	70.9	33.09	-
30	65.2	65.5	65.5	66.2	73.1	72.1	33.62	-
Mean	67.5	68.8	69.8	72.7	74.0	73.2	33.44	34.51
December								
1	67.2	67.9	67.9	68.0	72.3	73.0	34.43	-
2	71.9	72.0	72.0	72.0	70.9	70.7	35.92	-
3	59.2	59.3	60.6	65.0	66.2	67.5	32.59	32.51
4	62.0	65.0	72.1	74.3	70.0	66.0	32.85	-
5	75.8	75.8	75.2	74.0	69.9	69.9	-	-
6	57.8	57.9	58.0	59.7	67.7	67.2	32.74	-
7	74.2	74.2	74.1	74.0	71.9	70.8	36.13	-
8	71.3	72.0	72.0	72.2	70.9	70.3	35.87	-
9	-	-	-	-	-	-	-	-
10	75.3	75.5	75.4	74.0	71.9	71.3	36.20	35.99
11	76.3	76.3	75.7	73.7	72.9	72.2	-	-
12	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-
14	52.3	52.9	57.2	62.6	60.2	62.9	32.03	-
15	54.2	59.6	60.3	65.7	66.3	66.7	32.39	-
16	74.7	75.2	75.1	75.1	74.3	72.4	-	-
17	73.9	74.1	74.1	74.1	73.0	70.0	34.89	36.22
18	73.1	73.1	73.2	71.4	68.1	67.2	36.20	-
19	71.0	71.5	71.6	69.5	67.9	68.4	.20	-
20	72.0	72.0	72.0	72.0	69.5	69.0	36.18	-
21	-	-	-	-	-	-	-	-
22	72.1	72.2	72.2	72.1	72.1	71.9	36.20	-
23	72.0	72.1	72.1	72.2	72.3	71.3	36.23	-
24	70.8	70.8	70.8	70.8	70.8	70.0	-	36.17
25	72.8	72.8	72.9	71.3	70.2	70.0	36.32	-
26	71.1	71.2	71.2	71.3	71.4	71.0	.27	-
27	70.2	71.2	71.2	71.3	71.5	70.8	.23	-
28	-	-	-	-	-	-	36.23	-
29	-	-	-	-	-	-	-	-
30	71.8	71.7	71.4	70.5	69.8	68.7	36.27	-
31	73.5	73.6	73.6	72.8	69.5	69.0	36.27	36.20
Mean	69.5	70.0	71.3	70.8	70.1	69.5	35.21	35.42

Frying Pan Shoals Lightship (fig. 18, table 18)--The cold surface water of late February and March probably represents a flow of coastal water southward past Cape Hatteras, as occurred in 1958. Not until June did temperatures reach the mean again. The bottom maximum in early September of 81.8° F. equaled the 1958 high. The intrusion of colder water near the bottom in summer is an annual phenomenon.

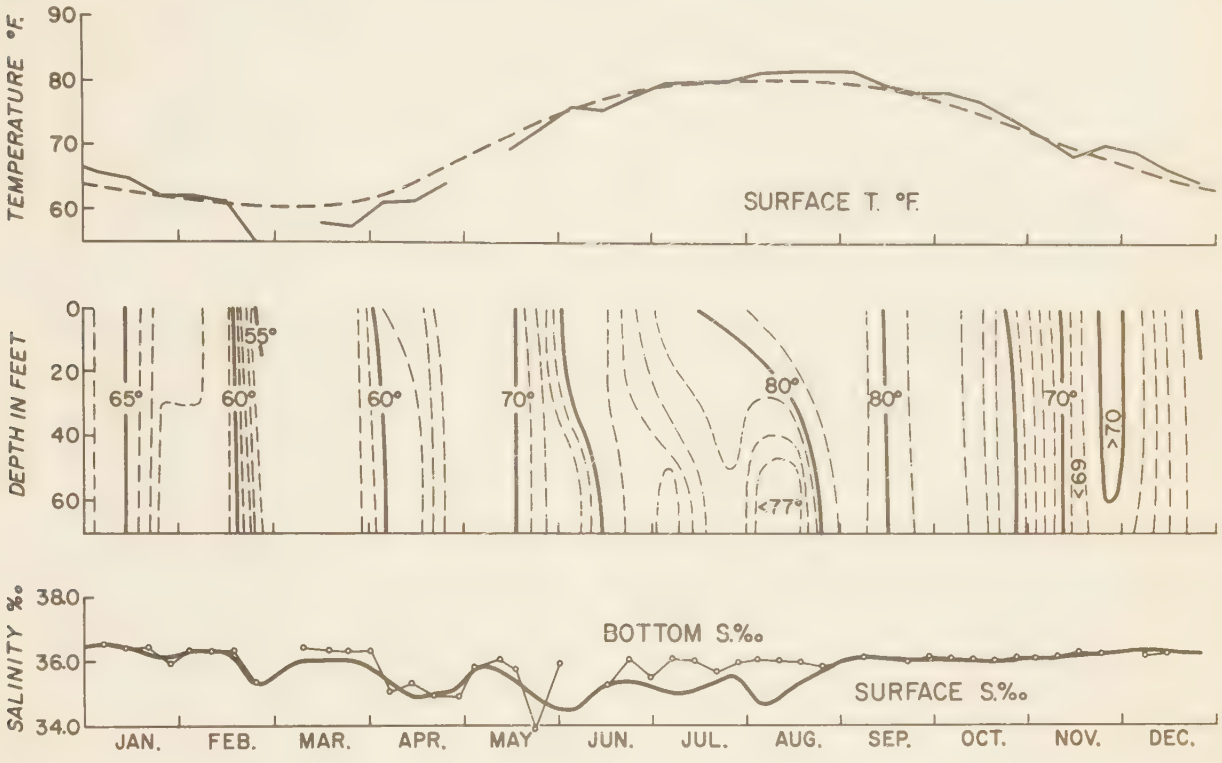

Figure 18.--Frying Pan Shoals Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 18.--Frying Pan Shoals Lightship: temperature (° F.) and salinity (°/oo), 1960

[33°28' 00" N. 77°38' 08" W.; water depth: 62 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	Surface	10 ft.	20 ft.	30 ft.	Surface	10 ft.		Surface	10 ft.	20 ft.	30 ft.	Surface	10 ft.
							February						
						-		-	-	-	-	36.22	-
	-	-	-	-		-		62.8	62.8	62.9	62.9	.29	-
	-	-	-	-	-	-		62.8	62.9	62.9	62.9	.32	36.32
					-	-		63.9	63.8	63.2	63.1	.28	-
						-		-	-	-	-	.35	-
								64.4	64.5	64.6	64.6	.37	-
						-		60.4	60.4	60.7	60.7	.38	-
						-		61.9	61.0	61.0	61.0	.36	-
	-	-	-	-	-	-		61.4	62.4	62.3	62.3	.35	-
						-		-	-	-	-	.33	36.30
						-		-	-	-	-	.33	-
						-		62.2	62.3	62.3	62.3	.31	-
								60.7	60.7	61.0	61.0	36.09	-
						-		-	-	-	-	-	-
	-	-	-	-	-	-		-	-	-	-	36.31	-
		61.1				-		60.6	60.9	61.0	61.0	.30	-
		60.				-		61.7	62.0	61.8	61.6	.38	36.32
		60.				-		61.8	61.8	61.8	61.8	36.23	-
	-	-	-	-	-	-		-	-	-	-	-	-
		6		64.		-		-	-	-	-	-	-
			62.	62.		-		58.9	58.3	58.5	58.6	34.91	-
		.9	60.	60.9		-		57.3	57.4	57.3	57.3	34.94	-
		.4	5	55.2		-		55.6	56.0	56.8	56.9	35.09	-
		.0	58.	58.9		-		58.5	58.5	58.8	58.8	.35	35.38
		.7	60.	60.1		-		-	-	-	-	35.30	-
		.8	64.	64.0		-		60.7	60.8	60.8	61.	36.17	-
	-	-	-	-				-	-	-	-	-	-
		.8				-		58.4	58.2	58.2	58.2	35.37	-
						-		58.9	58.	58.0	58.0	35.34	-
Mean							Mean	60.4	60.7	60.7	60.7	35.30	36.08
							April						
	-	-	-	-		-	1	59.9	59.8	59.9	59.9	36.08	-
	-	-	-	-		-	2	59.4	59.8	59.8	59.7	35.96	-
	-	-	-	-	-	-	3	59.1	59.2	59.2	59.2	36.06	-
	-	-	-	-	-	-	4	58.7	58.7	58.8	58.8	35.94	-
					-	-	5	-	-	-	-	.01	-
		59.3	59.	59.		-	6	58.7	58.6	58.6	-	.35	35.45
		60.2	58.	58.2		-	7	-	-	-	-	.28	-
		62.9	58.	58.2		-	8	58.2	58.2	58.2	-	.30	-
		63.8	63.8	63.8	-	-	9	-	-	-	-	.00	-
		63.6	64.1	64.1		-	10	59.8	59.8	59.8	59.8	35.18	-
		59.0	59.0	59.		-	11	60.9	60.9	60.9	60.9	36.07	-
		5	5	59.		-	12	62.1	62.1	62.2	62.2	35.34	-
		59.2	59.2	59.		-	13	-	-	-	-	.38	35.33
		59.8	59.1	59.		-	14	59.1	59.1	59.1	59.1	35.21	-
		60.5	60.3	60.1		-	15	60.9	60.9	60.9	60.9	36.11	-
	-	-	-	-	-	-	16	62.8	62.2	61.2	61.2	35.99	-
		62.1	62.9	62.		-	17	60.9	60.9	60.9	60.9	36.10	-
		61.0	61.2	61.		-	18	62.0	62.1	62.1	62.5	36.09	-
		58.1	58.1	58.		-	19	-	-	-	-	-	-
	-	-	-	-		-	20	62.8	62.	62.0	-	36.06	36.25
	-	-	-	-	-	-	21	60.	62.9	62.9	62.9	35.15	-
							22	-	-	-	-	35.98	-
							23	64.1	63.7	63.4	63.4	36.05	-
							24	62.9	62.8	62.8	62.8	36.02	-
							25	-	-	-	-	35.91	-
	-	-	-	-		-	26	-	-	-	-	-	-
							27	64.1	64.1	64.1	64.1	35.96	36.01
	-	-	-	-		-	28	63.1	63.0	63.0	63.0	35.94	-
							29	64.4	64.4	64.4	64.3	36.02	-
							30	63.9	63.9	63.9	63.9	35.18	-
Mean	-	-	-	-			Mean	61.1	61.0	62.4	61.8	35.12	36.06

Table 18.--Frying Pan Shoals Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[33°28' 00" N. 77°33' 08" W.; water depth: 72 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.		0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.
May							June						
1	-	-	-	-	35.09	-	1	75.3	74.9	72.2	72.0	34.51	35.97
2	-	-	-	-	.73	-	2	75.5	74.9	72.1	72.1	-	-
3	65.1	65.2	65.2	65.2	35.73	35.82	3	-	-	-	-	-	-
4	-	-	-	-	-	-	4	76.2	75.9	72.6	72.5	34.35	-
5	71.0	70.8	70.6	70.5	36.07	-	5	74.9	73.7	70.9	70.7	.53	-
6	71.5	71.5	71.6	71.7	.09	-	6	-	-	-	-	.50	-
7	-	-	-	-	36.08	-	7	77.9	76.5	73.8	73.7	34.60	-
8	-	-	-	-	-	-	8	-	-	-	-	-	-
9	70.2	70.3	70.3	70.3	36.10	-	9	-	-	-	-	-	-
10	70.0	68.2	68.2	68.2	-	-	10	-	-	-	-	-	-
11	70.7	70.8	70.8	70.8	36.07	36.06	11	74.9	74.8	74.8	74.8	35.57	-
12	70.0	70.0	70.0	70.0	35.91	-	12	74.8	74.9	74.9	74.9	.20	-
13	68.2	68.2	68.2	68.2	35.63	-	13	75.1	75.1	75.1	75.1	.20	-
14	69.0	69.0	69.0	69.0	-	-	14	75.3	75.2	75.1	75.1	.34	-
15	-	-	-	-	35.49	-	15	75.4	75.3	75.3	75.3	.26	35.26
16	69.0	68.9	68.9	68.9	.07	35.79	16	75.8	75.2	75.2	75.2	.17	-
17	-	-	-	-	.47	-	17	76.2	76.2	76.5	76.6	.22	-
18	69.3	69.8	69.9	70.0	.09	-	18	76.1	76.0	76.0	76.0	.42	-
19	-	-	-	-	35.44	-	19	77.0	76.2	76.2	76.2	.26	-
20	70.0	69.2	69.2	69.2	34.74	-	20	77.7	76.7	76.8	76.8	.17	-
21	70.7	70.2	70.2	70.2	-	-	21	77.9	77.4	76.2	76.2	.18	-
22	71.5	70.7	70.8	70.8	33.91	33.9[illegible]	22	77.1	77.1	76.6	76.3	.32	36.06
23	72.8	71.1	71.2	71.3	-	-	23	78.1	77.6	77.0	76.8	.33	-
24	-	-	-	-	-	-	24	78.9	77.0	75.8	75.2	35.12	-
25	-	-	-	-	-	-	25	79.5	76.1	75.0	75.0	34.96	-
26	72.0	71.8	71.6	71.5	35.13	-	26	77.2	77.2	75.9	75.0	35.48	-
27	72.7	71.9	71.5	71.2	34.95	-	27	76.8	76.9	76.9	76.8	.58	-
28	-	-	-	-	.56	-	28	78.1	78.1	78.0	78.0	.40	-
29	74.8	74.3	71.8	71.7	.41	-	29	78.1	78.2	77.9	77.9	.40	35.46
30	74.9	74.2	72.0	71.8	34.34	-	30	78.2	78.1	77.7	77.7	35.32	-
31	-	-	-	-	35.94	-							
Mean	-	-	-	-	35.35	35.39	Mean	76.7	76.2	75.4	75.3	35.14	35.69
July							August						
1	79.0	77.7	76.3	76.3	35.29	-	1	80.6	80.6	80.3	79.0	35.64	-
2	79.4	77.3	75.8	75.5	35.37	-	2	80.2	80.0	79.2	79.1	.17	-
3	79.8	78.7	75.3	75.2	34.92	-	3	79.7	79.1	77.0	77.0	.21	36.07
4	80.2	76.2	74.9	74.9	.91	-	4	80.9	78.1	76.6	76.3	35.12	-
5	80.2	80.2	75.9	75.0	.92	-	5	-	-	-	-	34.91	-
6	80.7	78.0	75.8	75.0	.88	36.09	6	81.3	75.6	74.8	74.8	34.84	-
7	80.8	79.8	76.1	76.1	34.79	-	7	82.8	79.1	75.5	74.9	33.25	-
8	-	-	-	-	35.41	-	8	82.7	76.4	74.7	74.2	33.64	-
9	-	-	-	-	34.95	-	9	82.2	78.2	77.7	77.4	34.04	-
10	79.3	79.0	77.7	77.5	.81	-	10	82.9	79.0	77.6	77.5	34.70	36.00
11	80.2	78.8	77.6	77.3	.74	-	11	80.9	79.0	78.8	78.8	35.02	-
12	80.8	79.8	77.2	77.1	.70	-	12	81.9	79.0	78.8	78.8	34.81	-
13	81.8	80.1	77.4	77.3	.68	36.01	13	82.0	77.8	76.0	75.9	34.97	-
14	81.1	78.2	78.1	78.1	34.57	-	14	83.2	81.3	76.0	75.9	35.20	-
15	79.9	77.9	77.8	77.7	35.19	-	15	83.7	83.1	76.1	76.1	-	-
16	79.1	79.0	78.8	78.7	.34	-	16	83.7	83.0	76.8	76.5	35.25	-
17	80.0	78.8	77.2	77.2	.46	-	17	82.2	76.3	75.8	75.8	.18	35.99
18	79.0	79.0	78.1	78.0	.47	-	18	81.0	80.7	75.0	75.0	.34	-
19	79.7	79.7	79.2	78.5	.56	-	19	80.6	80.7	76.5	76.2	.81	-
20	79.7	79.0	78.8	78.8	.57	35.66	20	80.7	80.3	79.1	77.7	.69	-
21	79.4	79.1	79.0	79.0	.42	-	21	-	-	-	-	.21	-
22	80.1	79.5	79.5	79.5	.43	-	22	81.7	81.3	78.2	78.2	.25	-
23	79.9	78.9	78.8	78.8	.61	-	23	80.1	80.1	79.8	77.8	.36	-
24	80.3	78.8	78.8	78.8	.69	-	24	80.6	80.6	80.6	-	.58	35.84
25	81.8	80.8	78.8	78.8	.48	-	25	81.9	81.9	79.5	79.5	.79	-
26	80.4	79.4	79.2	79.2	.66	-	26	82.8	82.8	81.4	79.7	35.96	-
27	81.7	79.3	79.2	79.2	.87	35.98	27	83.2	83.1	81.1	81.0	36.03	-
28	81.2	79.5	79.2	79.2	.68	-	28	81.9	81.9	81.9	81.9	35.96	-
29	78.1	78.0	76.1	76.1	.26	-	29	82.0	81.9	81.8	81.8	.92	-
30	80.0	80.3	80.6	-	.66	-	30	83.0	82.5	81.8	81.8	35.92	-
31	80.9	80.8	80.0	79.9	35.61	-	31	-	-	-	-	-	-
Mean	80.1	79.0	77.8	77.6	35.25	35.94		81.8	80.9	78.1	77.7	35.20	35.98

Table 18.--Frying Pan Shoals Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[33°28' 00" N., 77°33' 03" W.; water depth: 62 feet]

Month and day	Temperature at depth of--				Salinity at depth of--		Month and day	Temperature at depth of--				Salinity at depth of--	
	0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.		0 ft.	30 ft.	50 ft.	70 ft.	0 ft.	70 ft.
September							October						
1	83.2	83.1	81.5	81.3	36.04	-	1	79.3	79.4	79.5	79.5	36.02	-
2	82.9	82.5	82.5	82.5	.03	-	2	78.5	78.6	78.7	78.7	.06	-
3	82.0	82.2	82.4	82.5	.04	-	3	78.8	79.0	79.1	79.4	.03	-
4	81.4	81.5	81.8	81.8	.12	-	4	-	-	-	-	.02	-
5	81.1	81.1	81.1	81.1	.14	-	5	79.0	79.2	79.4	79.4	.08	36.07
6	81.5	81.5	81.5	81.6	.12	-	6	78.9	78.9	79.1	79.2	.06	-
7	81.7	81.7	81.7	81.7	.12	36.12	7	79.0	79.1	79.2	79.3	.04	-
8	81.3	81.5	81.7	81.7	.12	-	8	78.5	78.7	78.8	78.8	.07	-
9	81.5	81.7	81.8	81.8	.13	-	9	78.0	78.5	78.6	78.7	.05	-
10	81.0	81.7	81.9	81.9	36.11	-	10	77.9	78.1	78.2	78.3	.02	-
11	-	-	-	-	-	-	11	76.4	77.0	77.1	77.2	.12	-
12	-	-	-	-	-	-	12	77.0	77.1	77.1	77.1	.04	36.04
13	80.8	80.7	80.8	80.6	35.76	-	13	78.0	78.1	78.2	78.3	.06	-
14	-	-	-	-	36.07	-	14	77.5	77.8	77.8	77.8	.04	-
15	79.5	79.8	79.9	79.9	36.08	-	15	77.9	78.1	78.1	-	.01	-
16	-	-	-	-	-	-	16	77.2	77.3	77.5	77.5	.02	-
17	79.1	79.3	79.4	79.6	36.11	-	17	77.0	77.1	77.2	77.2	.04	-
18	79.2	79.2	79.2	79.6	.09	-	18	77.1	77.2	77.2	77.2	.04	-
19	80.0	80.1	80.1	80.2	.10	-	19	77.3	77.7	77.7	77.7	.05	36.01
20	79.5	79.7	79.8	79.9	36.04	-	20	-	-	-	-	.03	-
21	80.1	79.2	79.2	79.2	35.85	36.00	21	-	-	-	-	.01	-
22	79.3	79.6	79.7	79.8	35.98	-	22	76.7	76.8	76.9	76.9	.00	-
23	-	-	-	-	-	-	23	75.3	75.7	75.7	75.8	.05	-
24	79.0	79.0	79.1	79.1	36.12	-	24	75.0	75.1	75.1	75.2	.07	-
25	78.4	78.9	79.0	79.0	36.03	-	25	75.1	75.5	75.5	75.5	.13	-
26	78.2	78.3	78.7	78.8	35.95	-	26	74.0	75.3	75.5	75.5	.09	36.12
27	78.1	78.4	78.5	78.6	36.12	-	27	-	-	-	-	.04	-
28	78.1	78.1	78.3	78.6	.17	36.16	28	74.0	74.1	74.3	74.2	.12	-
29	78.0	78.1	78.3	78.6	36.19	-	29	73.3	73.7	73.8	73.8	.14	-
30	77.9	77.9	78.0	78.1	35.94	-	30	-	-	-	-	.09	-
31							31	74.7	74.9	75.0	75.0	36.05	-
Mean	80.1	80.2	80.2	80.3	36.06	-	Mean	77.0	77.2	77.3	77.3	36.05	36.06
November							December						
1	73.8	73.9	73.9	73.9	36.03	-	1	-	-	-	-	-	-
2	73.4	73.7	73.6	73.6	.03	36.10	2	67.1	67.2	67.3	66.0	36.34	-
3	73.0	73.1	73.1	73.1	.07	-	3	67.0	67.1	67.1	65.0	.30	-
4	70.0	71.1	71.1	71.2	.12	-	4	68.1	68.2	68.4	68.7	.39	-
5	-	-	-	-	.13	-	5	68.1	68.2	68.4	68.7	.66	-
6	70.8	70.7	71.0	71.0	.17	-	6	68.8	68.8	68.9	68.9	.37	-
7	-	-	-	-	.16	-	7	71.8	71.9	71.9	72.0	36.21	36.19
8	69.2	69.3	69.6	-	.18	-	8	71.7	72.0	72.1	72.2	-	-
9	70.4	70.6	70.5	70.7	.17	36.17	9	70.1	70.2	70.3	70.4	36.23	-
10	73.0	73.2	73.2	73.2	.21	-	10	72.7	72.8	72.2	67.0	-	-
11	-	-	-	-	.21	-	11	73.7	73.8	73.7	73.2	36.56	-
12	68.0	68.0	68.1	68.1	.22	-	12	71.0	71.1	71.2	71.3	36.25	-
13	67.9	68.0	68.0	68.0	.18	-	13	-	-	-	-	-	-
14	67.4	67.7	67.8	67.8	.25	-	14	68.3	68.8	68.8	68.8	-	36.22
15	67.1	67.3	67.5	67.5	.58	-	15	68.2	68.8	68.8	68.8	36.39	-
16	70.1	69.5	69.0	68.8	.25	36.30	16	67.0	67.1	67.2	67.2	.26	-
17	71.3	71.5	71.6	71.6	.24	-	17	61.9	62.1	62.1	62.1	.20	-
18	69.7	69.8	69.9	70.0	.31	-	18	62.9	63.1	63.2	63.2	.26	-
19	68.5	68.7	68.7	68.7	.20	-	19	62.3	62.7	62.8	62.8	.26	-
20	67.0	68.1	68.2	68.2	.23	-	20	65.2	65.5	65.5	65.5	36.25	-
21	68.7	68.0	67.2	67.1	.39	-	21	-	-	-	-	-	-
22	71.5	71.6	69.5	68.7	.32	-	22	66.0	66.1	66.0	65.8	36.26	-
23	68.2	67.9	68.0	68.0	.23	36.22	23	65.1	65.5	65.3	65.4	.24	-
24	71.3	71.6	71.2	70.8	.28	-	24	64.4	64.7	64.5	64.4	.28	-
25	67.5	67.6	67.5	67.6	.17	-	25	64.4	64.7	64.8	64.9	.26	-
26	68.8	68.8	68.6	67.5	.18	-	26	65.9	66.1	66.2	66.2	36.24	-
27	70.7	70.9	71.0	-	.35	-	27	63.9	64.1	64.2	64.2	-	-
28	73.4	74.0	74.0	74.0	.14	-	28	64.0	64.1	64.2	64.3	36.35	-
29	74.2	74.5	74.5	74.6	.15	-	29	65.7	66.1	66.1	66.1	.15	-
30	-	-	-	-	36.19	-	30	65.0	65.1	65.2	65.3	.27	-
31							31	64.1	64.2	64.3	64.5	36.27	-
Mean	70.2	70.4	70.2	70.2	36.21	36.20	Mean	66.9	67.1	67.2	66.9	36.30	-

Savannah Lightship (fig. 19, table 19)--There is no record of temperature at depth at Savannah during January or February owing to bathythermograph failure. The minimum surface temperature in March of 48.9° F. was exceeded in 1958 by a 10-day mean of 45.5° F. in February. Temperatures remained low through June, but were generally above the mean in the autumn until mid-December. Surface salinity was "normal" for this station.

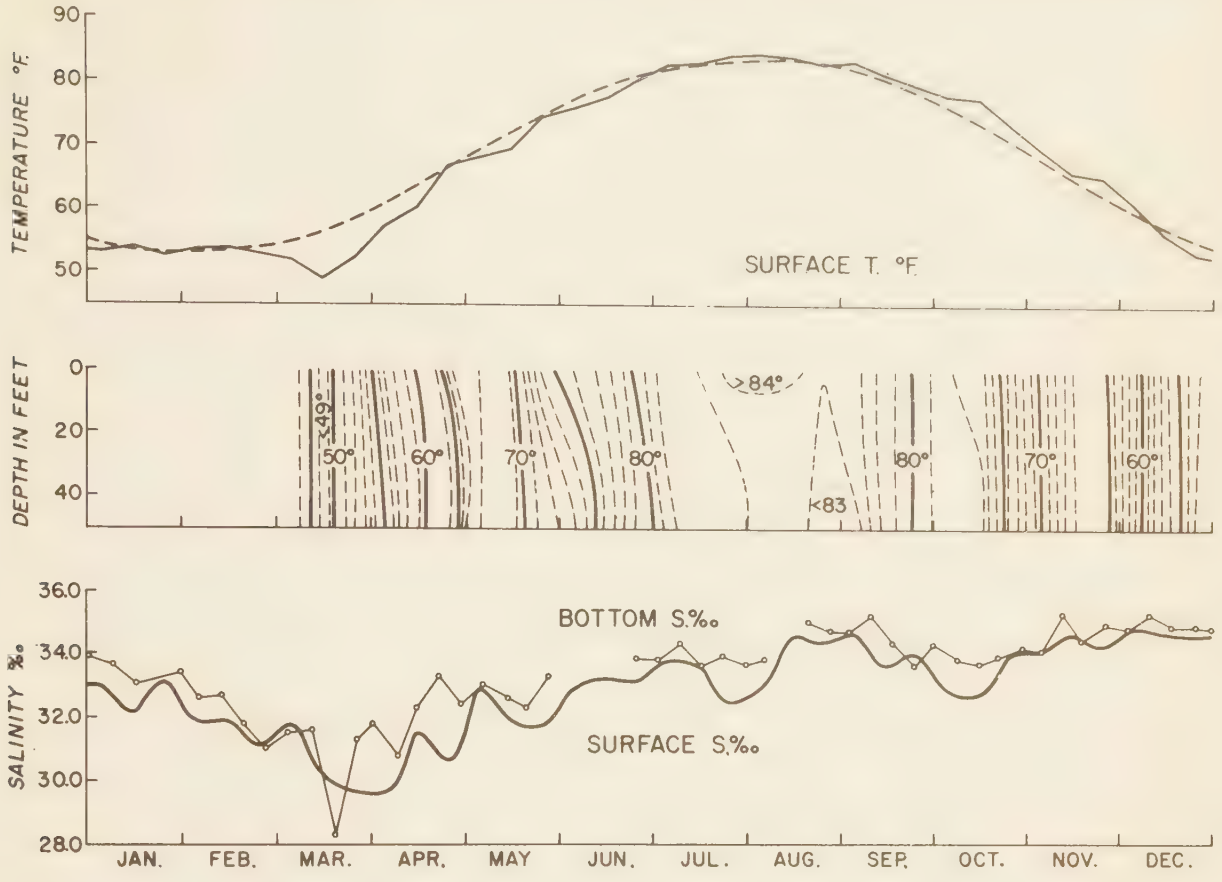

Figure 19.--Savannah Lightship. (Dashed line in upper diagram mean for period 1950-59.)

Table 19.--Savannah Lightship: temperature (° F.) and salinity (°/oo), 1960

[31°56.5' N. 80°39.6' W.; water depth: 48 feet]

Month and day	Temperature at depth of--			Salinity at depth of--		Month and day	Temperature at depth of--			Salinity at depth of--	
	0 ft.	30 ft.	48 ft.	0 ft.	48 ft.		0 ft.	30 ft.	48 ft.	0 ft.	48 ft.
January						February					
1	53.0	53.2	53.2	32.77	33.95	1	[illegible]	51.9	-	-	-
2	54.0	54.0	54.0	32.77	-	2	[illegible]	[illegible]	-	[illegible]	-
3	53.9	53.9	54.0	33.71	-	3	[illegible]	-	-	[illegible]	-
4	52.0	53.2	53.9	32.38	-	4	[illegible]	-	-	[illegible]	-
5	52.8	53.7	53.7	32.36	-	5	[illegible]	-	-	[illegible]	-
6	53.8	53.7	53.7	33.17	-	6	[illegible]	-	-	[illegible]	[illegible]
7	52.3	52.9	53.0	.40	-	7	[illegible]	-	-	31.92	-
8	52.0	52.0	52.1	.50	33.77	8	[illegible]	-	-	31.97	-
9	-	-	-	.30	33.63	9	[illegible]	-	-	30.89	-
10	53.1	-	-	33.07	-	10	[illegible]	-	-	32.38	-
11	53.0	-	-	30.92	-	11	53.2	-	-	31.64	-
12	53.2	-	-	32.17	-	12	54	-	-	32.30	-
13	54.0	-	-	33.21	-	13	54	-	-	.65	32.72
14	53.6	-	-	32.50	-	14	53	-	-	.20	-
15	52.9	-	-	31.02	-	15	54	-	-	.18	-
16	54.8	-	-	.83	33.10	16	54	-	-	32.26	-
17	55.0	-	-	31.74	-	17	54	-	-	30.58	-
18	54	-	-	32.85	-	18	54	-	-	32.52	-
19	54	-	-	.97	-	19	53	-	-	-	-
20	54	-	-	32.57		20	53	-	-	31.28	31.81
21	53	-	-	33.83	-	21	52	-	-	30.89	-
22	53	-	-	32.14	-	22	53	-	-	30.41	-
23	52	-	-	32.10	-	23	53	-	-	32.23	-
24	54	-	-	-	-	24	53	-	-	32.10	-
25	53	-	-	34.36	-	25	53	-	-	31.39	-
26	54	-	-	33.43	-	26	53	-	-	31.34	-
27	51	-	-	33.25	-	27	54	-	-	30.46	31.04
28	50.5	-	-	32.27	-	28	53	-	-	.86	-
29	51	-	-	32.97	-	29	52	-	-	30.80	-
30	52	-	-	33.26	33.47						
31	53.5	-	-	34.12							
Mean	53.1	-	-	32.80	33.58	Mean	53.3	-	-	31.68	32.06
March						April					
1	53.8	53.8	53.7	31.61	-	1	-	-	-	25.66	-
2	-	-	-	-	-	2	54.0	54.5	54.5	28.33	31.88
3	53.2	53.3	53.5	32.10	-	3	-	-	-	30.67	-
4	51.0	50.09	52.3	30.47	31.54	4	58.8	55.0	53.8	28.53	-
5	-	-	-	31.91	-	5	58.4	57.0	54.4	29.27	-
6	51.9	51.7	51.5	32.25	-	6	59.4	57.2	56.1	28.92	-
7	51.2	51.2	51.1	.34	-	7	57.1	55.6	55.6	29.68	-
8	51.0	50.9	50.9	32.38	-	8	55.7	55.3	55.3	32.49	-
9	50.8	50.8	50.8	31.41	-	9	58.1	55.2	55.2	30.82	30.82
10	-	-	-	-	-	10	57.2	55.9	55.8	32.47	-
11	-	-	-	-	-	11	57.2	57.1	56.8	.67	-
12	48.8	48.6	49.0	31.02	31.66	12	57.7	56.8	56.5	32.29	-
13	-	-	-	30.32	-	13	57.9	57.7	57.7	31.35	-
14	48.1	48.0	48.0	30.24	-	14	60.2	58.3	-	30.16	-
15	49.0	49.0	49.0	31.88	-	15	60.0	58.9	58.9	31.86	32.34
16	-	-	-	31.93	-	16	60.0	59.1	59.0	32.09	-
17	49.1	49.1	49.1	-	-	17	61.0	59.8	59.7	31.05	-
18	-	-	-	-	-	18	64.0	60.1	60.1	29.86	-
19	49.2	49.1	49.1	28.34	28.34	19	62.1	60.2	60.3	30.79	-
20	49.0	49.1	-	.34	-	20	61.0	61.1	61.1	33.15	-
[illegible]	[illegible]	[illegible]	-	28.41	-	21	61.2	61.0	61.0	33.23	-
[illegible]	[illegible]	[illegible]	-	25.59	-	22	62.4	61.9	62.0	30.90	33.33
[illegible]	-	-	-	30.18	-	23	66.0	62.9	62.9	31.72	-
[illegible]	[illegible]	[illegible]	51.1	.12	-	24	66.0	63.2	63.2	29.40	-
[illegible]	-	-	-	30.14	-	25	70.1	63.8	63.8	27.75	-
[illegible]	-	-	-	31.07	31.33	26	70.7	63.9	63.9	28.81	-
[illegible]	[illegible]	[illegible]	51.9	30.60	-	27	70.7	64.6	64.4	29.16	-
[illegible]	[illegible]	[illegible]	52.0	30.30	-	28	68.3	64.6	64.7	30.68	-
[illegible]	-	-	-	29.87	-	29	66.5	66.4	66.4	32.29	32.47
[illegible]	[illegible]	-	-	30.92	-	30	66.9	66.7	66.8	32.87	-
[illegible]	[illegible]	[illegible]	54.1	29.55	-						
Mean	[illegible]	[illegible]	-	30.51	30.72	Mean	61.7	59.8	59.6	30.65	32.17

Table 19.--Savannah Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[31°56.5' N. 80°39.6' W.; water depth: 48 feet]

Month and day	Temperature at depth of--			Salinity at depth of--		Month and day	Temperature at depth of--			Salinity at depth of--	
	0 ft.	30 ft.	48 ft.	0 ft.	48 ft.		0 ft.	30 ft.	48 ft.	0 ft.	48 ft.
May						June					
1	68.0	67.2	67.1	32.84	-	1	73.0	71.9	71.9	-	-
2	68.7	67.0	67.2	32.23	-	2	76.7	71.4	71.4	32.54	-
3	67.0	67.2	67.3	33.34	-	3	-	-	-	.77	-
4	67.9	67.9	67.8	33.05	-	4	75.5	71.9	71.9	.77	-
5	67.8	67.8	67.8	32.95	-	5	77.1	72.1	71.9	.82	-
6	68.1	68.1	68.1	33.09	33.08	6	-	-	-	.70	-
7	68.8	68.7	68.6	.14	-	7	79.3	72.9	72.7	32.66	-
8	68.0	69.0	68.9	33.05	-	8	76.3	75.0	73.5	33.28	-
9	68.2	68.7	68.6	32.42	-	9	75.4	75.4	75.5	.53	-
10	68.2	68.2	68.1	33.03	-	10	74.8	74.8	74.9	.67	-
11	68.1	68.2	68.2	32.56	-	11	76.3	75.0	75.0	.50	-
12	68.6	68.6	68.6	.57	-	12	75.7	75.5	75.4	.52	-
13	68.4	68.7	68.7	.64	-	13	75.9	75.4	75.4	.37	-
14	68.2	68.3	68.2	.52	32.66	14	77.0	76.1	76.0	33.21	-
15	68.6	68.4	68.4	32.24	-	15	-	-	-	-	-
16	68.9	68.7	68.3	31.55	-	16	79.3	77.1	76.8	33.25	-
17	70.0	69.0	68.9	.53	-	17	78.0	77.2	77.0	33.23	-
18	70.7	69.0	68.7	31.23	-	18	78.2	77.1	77.0	32.98	-
19	71.4	68.8	68.8	30.61	-	19	78.0	77.1	77.0	33.28	-
20	71.0	70.6	70.4	32.27	32.31	20	79.5	77.2	77.1	32.92	-
21	71.5	71.1	71.1	32.37	-	21	79.0	76.8	76.8	.62	-
22	73.0	72.1	71.6	31.23	-	22	78.6	77.6	77.5	.59	-
23	73.6	73.2	71.8	.72	-	23	80.0	78.1	78.1	.25	-
24	74.6	71.0	70.9	.51	-	24	81.3	79.0	79.0	32.93	-
25	74.4	71.2	71.1	.65	-	25	81.2	80.0	79.9	33.58	33.89
26	75.0	71.0	70.9	.63	-	26	80.5	80.0	79.9	33.60	-
27	75.6	71.4	70.8	.49	33.30	27	80.5	80.3	80.2	34.01	-
28	75.2	70.9	70.8	.52	-	28	80.5	80.3	80.2	33.53	-
29	77.1	72.1	72.0	.43	-	29	81.0	80.0	80.0	33.75	-
30	75.1	71.5	71.3	31.80	-	30	82.1	80.7	80.1	32.90	-
31	74.3	71.8	71.6	32.42	-						
Mean	70.8	68.5	69.4	32.18	32.84	Mean	78.2	76.5	76.4	33.13	-
July						August					
1	82.2	81.5	81.2	34.12	-	1	83.9	83.9	83.9	32.73	-
2	82.5	81.9	81.5	33.99	33.87	2	83.7	83.7	83.7	.00	-
3	83.1	82.0	82.0	.81	-	3	83.3	83.2	83.1	32.06	-
4	83.0	82.2	82.0	.60	-	4	84.1	83.6	83.6	33.13	-
5	83.2	82.5	82.0	.34	-	5	84.9	84.0	84.0	.42	-
6	82.7	81.8	81.8	.77	-	6	84.0	83.5	83.4	33.40	33.88
7	-	82.1	82.0	.57	-	7	84.5	83.8	83.8	32.36	-
8	82.9	82.8	82.7	33.65	-	8	85.1	84.0	83.9	32.82	-
9	82.0	81.9	81.9	34.22	34.34	9	86.1	84.1	84.1	33.54	-
10	82.5	82.0	82.0	.29	-	10	85.1	84.1	84.0	34.17	-
11	82.7	82.0	82.0	.27	-	11	84.9	84.0	83.9	.35	-
12	82.9	82.0	82.0	.32	-	12	84.9	84.0	84.0	.82	-
13	82.5	82.1	82.0	34.28	-	13	84.1	83.8	83.8	.98	-
14	83.0	82.9	82.8	33.56	-	14	84.8	83.6	83.0	.74	-
15	83.8	83.0	83.0	.31	-	15	84.2	83.2	83.0	.36	-
16	82.9	82.9	82.7	.51	33.66	16	84.8	83.2	82.9	.12	-
17	82.9	82.4	82.1	.82	-	17	84.1	84.0	83.9	.63	-
18	83.0	82.3	82.3	.96	-	18	83.4	83.4	82.9	.73	-
19	83.5	82.5	82.2	33.84	-	19	83.2	82.9	82.6	.33	-
20	83.2	82.8	82.7	32.00	-	20	83.2	82.7	82.5	.34	35.04
21	84.0	82.9	82.8	32.00	-	21	82.1	81.6	81.7	34.13	-
22	83.6	81.8	81.8	31.75	-	22	84.3	83.0	83.0	33.32	-
23	84.3	82.0	81.9	32.06	33.96	23	83.9	83.6	83.3	34.08	-
24	83.1	82.0	81.9	31.00	-	24	83.2	83.0	83.0	.43	-
25	-	-	-	31.44	-	25	82.8	82.8	82.2	34.36	-
26	84.8	82.1	82.0	32.86	-	26	82.0	81.9	81.8	-	-
27	84.7	82.1	-	32.95	-	27	82.1	82.1	82.1	34.78	34.78
28	86.0	84.7	83.0	33.20	-	28	82.3	82.0	82.0	.71	-
29	83.4	83.4	83.2	.43	-	29	82.9	82.7	82.4	.71	-
30	84.0	83.0	83.0	.17	33.70	30	83.7	82.8	82.8	.76	-
31	83.8	83.0	83.0	33.16	-	31	83.5	83.0	82.8	34.83	-
Mean	83.3	82.4	82.3	33.30	33.91	Mean	83.8	83.3	83.1	33.97	-

Table 19.--Savannah Lightship: temperature (° F.) and salinity (°/oo), 1960--Continued

[31°56.5' N. 80°39.6' W.; water depth: 48 feet]

Month and day	Temperature at depth of--			Salinity at depth of--	
	0 ft.	30 ft.	48 ft.	0 ft.	48 ft.
September					
1	84.0	83.3	83.1	34.77	-
2	83.3	83.2	83.1	.51	-
3	83.6	83.2	83.0	.67	34.75
4	83.8	83.7	83.6	.69	-
5	83.7	83.1	83.0	.63	-
6	84.0	83.1	83.1	.53	-
7	83.3	83.0	83.0	.81	-
8	83.7	83.1	83.0	.81	-
9	83.0	82.4	82.2	.60	-
10	82.8	82.5	82.3	34.56	35.24
11	-	-	-	-	-
12	81.5	82.0	82.0	32.60	-
13	80.0	80.3	80.7	32.54	-
14	82.0	82.0	82.0	33.98	-
15	82.0	81.8	81.8	34.10	-
16	81.2	81.1	81.1	.23	-
17	80.9	80.9	80.9	34.18	34.38
18	81.0	80.9	80.9	33.62	-
19	82.0	81.1	81.1	34.05	-
20	82.0	81.5	81.5	33.75	-
21	81.6	81.4	81.3	33.55	-
22	81.5	81.4	81.4	34.78	-
23	80.6	80.5	80.5	34.10	-
24	80.1	80.0	80.0	33.50	33.67
25	79.5	79.5	79.5	33.97	-
26	79.0	79.0	79.0	34.34	-
27	79.0	78.6	78.4	.34	-
28	78.8	78.6	78.6	.26	-
29	78.3	78.3	78.2	34.07	-
30	78.2	-	-	33.75	-
Mean	81.5	81.4	81.4	34.13	34.51
November					
1	72.3	72.5	72.5	34.43	-
2	71.4	72.0	72.0	33.95	-
3	70.8	71.0	71.2	.71	-
4	69.9	69.9	70.1	.67	-
5	69.9	70.2	70.4	33.67	34.11
6	69.4	69.6	70.2	32.97	-
7	68.4	68.8	68.9	33.85	-
8	67.9	68.0	68.0	34.60	-
9	68.1	68.1	68.0	35.17	-
10	68.5	68.0	68.1	.22	-
11	66.5	66.7	66.7	.07	-
12	66.6	66.7	66.8	.10	35.30
13	66.4	66.6	66.6	.13	-
14	66.2	66.4	66.4	35.06	-
15	65.9	66.1	66.2	34.64	-
16	66.2	66.1	66.0	.31	-
17	65.6	65.8	66.0	.27	-
18	65.8	65.8	65.7	.50	34.48
19	65.8	65.8	65.8	.51	-
20	64.8	65.0	65.0	.10	-
21	65.1	65.0	65.1	.11	-
22	64.9	64.9	64.9	.22	-
23	65.8	65.4	65.5	.24	-
24	65.5	65.3	65.5	34.16	-
25	66.0	66.1	66.1	35.00	-
26	65.9	65.9	65.8	34.98	34.99
27	65.9	66.0	65.9	34.59	-
28	65.2	65.9	66.1	33.81	-
29	65.4	66.0	66.1	.69	-
30	64.8	64.9	65.0	33.92	-
Mean	67.0	67.2	67.2	34.36	34.72

Month and day	Temperature at depth of--			Salinity at depth of--	
	0 ft.	30 ft.	48 ft.	0 ft.	48 ft.
October					
1	77.7	77.9	78.1	33.12	34.37
2	77.2	77.7	77.7	.84	-
3	77.5	77.9	77.9	.27	-
4	77.9	77.9	77.9	.47	-
5	78.5	78.2	78.2	33.22	-
6	78.0	78.1	78.1	32.65	-
7	78.6	78.1	78.1	.33	-
8	78.9	78.5	78.5	32.33	33.87
9	78.2	78.9	78.9	31.84	-
10	78.8	78.9	79.0	32.39	-
11	78.1	78.8	78.9	.92	-
12	78.0	78.8	78.9	32.80	-
13	77.8	78.8	78.9	29.90	-
14	77.0	77.9	77.9	32.09	-
15	78.1	78.1	78.1	33.17	33.72
16	-	-	-	.29	-
17	78.0	78.1	78.1	.45	-
18	78.1	78.1	78.2	.30	-
19	77.0	76.8	76.8	.25	-
20	-	-	-	.27	-
21	-	-	-	.95	33.93
22	75.8	75.9	76.0	33.93	-
23	75.7	75.8	75.9	34.11	-
24	75.1	75.0	75.1	33.98	-
25	73.7	73.7	73.8	.62	-
26	73.2	73.1	73.2	.80	-
27	73.0	73.0	73.0	33.98	-
28	72.3	72.4	72.5	34.11	-
29	72.3	72.4	72.4	.23	34.22
30	72.4	72.4	72.4	.36	-
31	73.8	73.8	73.8	34.60	-
Mean	76.5	76.6	76.7	33.24	34.02
December					
1	64.0	64.0	64.0	34.72	-
2	-	-	-	35.04	-
3	61.0	61.0	61.0	34.68	34.82
4	60.7	60.6	61.0	.65	-
5	61.0	61.0	61.0	.71	-
6	61.0	61.0	60.9	.73	-
7	61.2	61.0	61.0	.97	-
8	61.1	61.0	61.0	34.90	-
9	60.3	60.3	60.2	35.01	-
10	59.9	59.9	59.8	.18	35.28
11	59.7	59.7	59.7	.15	-
12	59.8	59.8	59.8	.27	-
13	57.0	57.0	57.0	.19	-
14	57.7	57.7	-	35.20	-
15	56.9	56.9	56.9	34.86	-
16	56.1	56.1	56.1	35.12	-
17	53.9	54.1	55.0	34.14	34.90
18	54.0	54.7	54.8	.17	-
19	53.4	54.1	54.1	34.13	-
20	53.5	54.1	54.1	33.75	-
21	54.2	54.0	54.0	34.37	-
22	53.6	53.6	53.7	.82	-
23	52.2	52.2	52.2	.82	-
24	53.0	52.5	52.6	.85	-
25	52.2	52.1	52.0	.85	34.90
26	52.7	52.7	52.4	34.88	-
27	-	-	-	33.41	-
28	-	-	-	34.66	-
29	-	-	-	.75	-
30	-	-	-	.38	-
31	53.5	53.7	-	34.85	34.86
Mean	57.1	57.1	57.3	34.72	34.95

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